Developing a Continuum of Services: Options and Resources for the Ohio Department of Education

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Section I

Introduction and Overview of Report and Selection of Partner District Sites

By Elissa Brown
Section I: Introduction and Overview of Report

From January 24, 2005 to June 30, 2005, the Ohio Department of Education (ODE) contracted with the Center for Gifted Education at The College of William & Mary to conduct a comprehensive research and evaluation study, in collaboration with the Ohio Department of Education and five Ohio partner school districts, on developing a comprehensive continuum of services for gifted students. The evaluation was conducted under the co-directorship of Dr. Joyce VanTassel-Baska, Jody and Layton Smith Professor of Education and Executive Director of the Center for Gifted Education and Dr. Elissa Brown, Director of the Center for Gifted Education.

Study Purpose and Evaluation Questions

The purpose of the research and evaluation study was to respond to several project objectives:

a) to conduct a review and analysis of national research and school district policies and practices related to providing a comprehensive continuum of services for gifted students; b) to develop a “toolkit” for educators that includes a summary of the analysis and research as well as model policies and practical recommendations for school districts; c) to evaluate the availability and comprehensiveness of gifted services available in Ohio schools; d) to document Ohio best practices and recommendations for Ohio school districts regarding service settings; and e) to provide recommendations for the Ohio Department of Education regarding policy development and resources needed to implement a comprehensive K-12 services in Ohio schools.

To investigate the above objectives and provide a foundation for the toolkit, the following research questions guided the design and implementation of this study.

1. To what extent are appropriate instruction and services available to K-12 gifted students in Ohio?
2. To what extent do instruction and service settings employed by Ohio schools match research-based best practices?
3. What are the strengths and weaknesses of popular service settings employed by Ohio schools?
4. What barriers prevent the provision of a comprehensive continuum of services for gifted students?
5. What policies, activities, and resources are needed for ODE and school districts to improve the availability of comprehensive continua of services for gifted students?
6. How can school districts use available resources most effectively to serve gifted students?

Data Sources

To investigate the above research questions, quantitative and qualitative data were collected from multiple sources including questionnaire statewide coordinator survey, document reviews, focus groups, interviews, and ODE self-report EMIS data (Section B). Case studies were developed with identified partnering districts. The five school districts selected for case study analysis were: Antwerp Local, Cambridge City, Maumee City, Salem City, and Pickerington Local.

Instrumentation

A. Focus Group and Interview Forms

Three focus group protocols and one interview protocol were developed targeting gifted students and adult stakeholders. All forms were developed for gifted students, their parents, teachers of
the gifted and administrators to assess their understanding of the continuum of services that their local
district provides for gifted students. The protocols were employed with a particular stakeholder group,
generally 6-8 individuals, to gain perceptions about the status of the gifted program, the perceived
strengths and limitations, and the evidence for student and program effectiveness. A sample protocol is
in Appendix A.

B. Statewide Coordinator Survey

The six-page gifted program survey was designed in collaboration with state level personnel to
assess different components that are typically embedded in a comprehensive continuum of services.
The components in the survey were the categories of curriculum and instruction/differentiation,
organizational arrangements, student performance and evaluation, and administration/change. Space
was provided at the end of the survey for comments (See Appendix B).

C. Curriculum Review Form

A curriculum review form for the evaluation of curriculum units was employed to judge the
effectiveness of curriculum products. The review was completed on district samples and a synthesis of
document review findings can be found within each case study report.

Partner Districts

One of the project objectives was to collaborate with five Ohio school districts. The selection
for the partner districts was conducted by the Ohio Department of Education. Each partner district
completed a “Partner District Collaboration Plan” and sent it to the lead research team of the Center for
Gifted Education at the College of William and Mary. Members of the research team conducted a 1-2
day on-site visit with each selected district and conducted focus group sessions with multiple
stakeholders, interviews with key administrative personnel and collected relevant documents for
review. The research team then analyzed all data sources and completed case studies for each district.
Case studies are in Section III of this report. The partner districts were: Antwerp Local, Cambridge
City, Maumee City, Salem City and Pickerington Local. Data were analyzed by each site and across
districts.
Section II

Research Review and Summary

By Tamra Stambaugh
Section II: Research Review

Continuum of Services

A continuum of services for the gifted is generally defined as a range of the level of services provided to meet the needs of gifted students. The various levels of services provided through a continuum are perceived as horizontal and vertical comprehensive articulation of services provided to gifted students (VanTassel-Baska, 2003). A horizontal continuum of services includes multiple options at each grade level that are dependent upon the needs of the students identified as gifted. For instance, some students may be provided in-class options, others may be provided weekly services with a trained educator in the field of gifted education, whereas, other students may be accelerated on a daily basis or placed in a separate classroom for services. Similarly, a vertical continuum of services consists of options at all grade levels, K-12, for gifted learners. A continuum of services implies that there is a range in the levels and types of need among gifted students at each grade level and that gifted students may need a range of services at each grade level of their school career, not just during certain grades.

Over the past several years, the national definition and many state definitions of gifted have changed to encompass a wider range of gifted students in specific content areas, the arts, leadership, as well as those of superior intelligence (Stephens and Karnes, 2000). Gagne (1995) also recognizes the changing terminology in the field of gifted education as reflected in the literature and definitions over time. He differentiates among the intellectual, academic, artistic, and psychomotor abilities suggesting a continuum of services be targeted to the different types of gifted individuals. The widespread popularity of Gardner’s Multiple Intelligences (1993) further propels the broadened identification definitions and subsequent services, requiring districts to adapt a continuum of services and teaching methods to meet the wide ranges of abilities within subgroups of the gifted population.

The call for a continuum of services for the gifted and talented is not a new concept. Research on talent development, curriculum, creativity, and the intervention literature in general suggest the need for a continuum of services to be provided for gifted learners to develop academically (Bloom, 1985; Csikszentmihalyi, 1993; 1996; Renzulli, 1976; Gagne, 1995; VanTassel-Baska, 1986, 2003; Maker & Nielson, 1996; Renzulli, Leppien, & Hays, 2000; Betts & Neihart, 1986; Feldhusen, 1996; Gallagher, 1997; Rogers, 2002; Colangelo, Assouline, & Gross, 2004; Tannenbaum, 1986). The talent development literature confirms the importance of internal and external influences that impact student achievement and future endeavors during specific developmental stages and corresponding levels of ability or precocity (Gagne, 1995; Csikszentmihalyi, 1993; Bloom, 1985). VanTassel-Baska (2003) advocates the use of a curriculum scope and sequence to be designed with outcomes for gifted learners, K-12, with an emphasis on the core content areas. Rogers (2002) notes the importance of various service provisions in order to avoid repetition in the curriculum for gifted learners and to provide the school district with a framework and specific options for implementing services. The National Association of Gifted Children (NAGC, 1998) also emphasizes a continuum of services as part of an exemplary program design for gifted learners. Tannenbaum (1986) further suggests an “all, many, some, few” model of differentiation to meet the range of gifted student abilities through a continuum of differentiated services based upon the range of needs, interests, and talents of gifted students. Renzulli (in Renzulli, Leppien, & Hays, 2000) proposes a multiple
menu model of service options that districts may employ to differentiate for gifted learners throughout their school career. The Association of Supervision and Curriculum Development (ASCD) promotes the need for a continuum of services not only for gifted students but for all students through the differentiation of products, content, and processes based on individual student readiness, interests, and learning profiles (see Tomlinson, 1995, 2000, 2001, 2002; Tomlinson & Cunningham Eidson, 2003a & 2003b.)

Intervention strategies, placement, and organizational options such as acceleration and grouping also support the need for a continuum of services for gifted learners (Reis, Burns, & Renzulli, 1992; Colangelo, Assouline, & Gross, 2004; Rogers, 1998; Kulik & Kulik, 1992; Swiatek, 1993). Moreover, policy studies suggest the need for a continuum of services to be adopted by local districts and state boards of education (Gallagher, 2002; Blesk-Rechek, Lubinski, & Benbow, 2004; VanTassel-Baska, 2005; Purcell, 1995).

Even though recommended, the implementation of a continuum of services continues to be problematic. Few school districts in the United States employ a full continuum of horizontal and vertical services for gifted learners. The United States Department of Education conducted a national survey regarding the state of gifted education over a decade ago entitled *The National Excellence Report: A Case for Developing America’s Talent* (1993). This seminal synthesis found that programs for the gifted and talented are sparse, and even the most effective schools are limited in the scope and rigor of programs provided to America’s top students. Furthermore, funding for services, policy initiatives, and programs to develop a continuum of services is virtually non-existent (Purcell, 1995; Landrum, Katsiyannis, & DeWaard, 1998; Baker & Friedman-Nimz, 2004).

Based on the National Excellence Report findings (1993), goals for providing services to America’s top students were established and include: providing rigorous curriculum standards and assessment for gifted and talented learners, instituting pacing flexibility and variety in the types of learning opportunities available to students, broadening the definition of gifted learners include multiple measures and abilities, and emphasizing professional development practices for all teachers regarding the needs of gifted learners and including effective strategies to meet those needs.

Subsequent studies continue to support the findings of the National Excellence Report and suggest that little has changed regarding the need for a continuum of services and surmise that many of the goals of the National Excellence Report have not been met or properly funded (Westberg, Archambault, & Brown, 1997; Purcell, 1995; Landrum, Katsiyannis, & DeWaard, 1998; VanTassel-Baska, 2005; Westberg & Daoust, 2003).

Recommendations for improving the rigor, scope, knowledge, and resources in gifted education as suggested in the National Excellence Report goals and other literature in the field of gifted education may be categorized into four strands: 1) instituting a rigorous curriculum and instructional service model, K-12; 2) organizational arrangements of services; 3) student performance and program evaluation, and 4) administrative leadership and institutional change. Each thread and relevant literature findings will be discussed in detail.
Curriculum and Instruction

The research on curriculum and instruction as part of a continuum of services consists of talent development and eminent person studies, specific curriculum and instructional models, and interventions such as curriculum units found to be effective with gifted learners. Practice-based literature is also available to provide suggestions for implementing effective curriculum and instructional models within a school district.

According to the talent development literature and eminent person studies, opportunities and support must be available in particular content domains throughout a child’s school career, especially during critical times such as adolescence. Bloom (1985) studied successful young persons over a four year period and found that school, community, and family support in a particular content field is necessary for future talent development. Likewise, highly creative individuals attribute their attainment to personal motivation and drive, environment, prior opportunities for pursuit of interests, and mentoring (Csikszentmihalyi, 1996). Gagne (1995) systematizes the process into a Differentiated Model of Gifted and Talent which illustrates the impact of environmental catalysts such as family, community, life events, and interests as well as natural catalysts such as student precocity and intelligence that impact life achievement. Disadvantaged students who may not qualify for gifted services based on traditional measures perform better when provided opportunities to enhance their abilities in reading and math through exposure to higher level options and activities and may eventually qualify for academically gifted programs based on the continuum of targeted services provided to meet their needs (Mills, Stork, & Krug, 1992; VanTassel-Baska, Johnson, & Avery, 2002).

Curriculum Models

School districts employ or adapt a plethora of curriculum models as part of a continuum of services. However, not all curriculum models cite a strong research base for effectiveness with gifted learners. VanTassel-Baska & Brown (2005) applied specific criteria to the curriculum models most employed within school districts. Models with effectiveness data regarding student achievement and/or motivation and cited research with control and experimental groups include: the Schoolwide Enrichment Model, the Integrated Curriculum Model, the Purdue Three Stage Model, the Stanley Diagnostic-Prescriptive Model, and Talents Unlimited. Each will be discussed separately.

The Schoolwide Enrichment Model (SEM) (Renzulli, 1976) promotes independent study through Type I, II, and III enrichment options. Type I activities are exploratory in nature and include field trips and interest centers. Type II activities engage students in research on a particular topic of interest. The highest level, Type III, involves students as active participants within a discipline or field that includes in-depth research and product creation in an area of interest. Students engaged in the SEM were found to be excited about their work and more motivated and self-efficacious (Delcourt, 1988). The strongest gains in student achievement are found when compacting is utilized within the SEM. Students who document mastery of a subject area or unit may begin a Type III investigation. Results demonstrate that the scores on content knowledge were as high as or higher than non-compacted peers (Reis & Purcell, 1993). Renzulli & Reis (1994) also cite model effectiveness in creative productivity, personal and social development, and self efficacy of gifted students, including underrepresented populations such as Black, Hispanic, or of low socio-economic status.
The Integrated Curriculum Model (ICM) (VanTassel-Baska, 1986) provides a model of instruction for gifted learners through the incorporation of a combination of advanced content and advanced processes and products within an overarching conceptual framework. Students connect accelerated content in a specific subject area to a concept such as change, systems, or cause-and-effect, for example, using advanced processes such as reasoning, literary analysis, or problem-based learning as well as issue-based research and persuasive writing. Specific units in science, social studies, and language arts have been written based on the ICM and found to be significantly effective with gifted learners. In language arts gifted students who were exposed to the William and Mary curriculum units in grades 4-6 improved significantly when compared to the control group in literary analysis and interpretation, persuasive writing, and linguistic competence (VanTassel-Baska, Johnson, Hughes, & Boyce, 1996). Science units were also found to be effective in the students’ use of experimental design techniques (VanTassel-Baska, et al, 1998) and significant differences on specific items of the content assessments and critical thinking assessments as well as the teacher’s use of critical thinking were evident is social studies (Little, 2002; Feng, Rogers, VanTassel-Baska, in press).

Talents Unlimited consists of four major components to help students advance in specific content, skill, or talent areas. The model includes communication, forecasting, decision making and planning, and an inservice component for educators implementing the curriculum models. The program models are found to promote growth in creative and critical thinking as well as improvement on standardized assessments in core content areas (Schlichter & Palmer, 1993).

The Purdue-Three Stage Enrichment Model (Feldhusen & Kolloff, 1986) focuses on three stages of enrichment. Stage one is the development of divergent and convergent thinking, stage two emphasizes creative problem solving, and stage three allows students to apply research skills through independent study opportunities. Students who participate in the Three-Stage Enrichment Model show gains in creative thinking and self-esteem. Other studies utilizing the model found that students preferred personally-generated study instead of teacher-assigned ones (Moon, Feldhusen, & Dillon, 1994). At the secondary level, the model provides acceleration and enrichment with counseling to match student needs and abilities. Components of the secondary model include advanced placement classes, honors classes, seminars, career education, math-science acceleration, the arts, extra school instruction, cultural experiences, foreign languages, and vocational programs (Feldhusen & Reilly, 1983).

The Diagnostic-Prescriptive Model of Talent Identification and Development by Stanley (Stanley, Keating, & Fox, 1974) includes the identification of high ability students through the use of off-grade-level assessments. Based on the assessments, a diagnostic testing-prescriptive instructional approach is employed (DT-PI). Through this approach student instruction is matched to their level of need through accelerative coursework. Longitudinal data suggest long term achievement gains when the model is employed (Brody & Benbow, 1987; Swiatek, 1993). This approach has been widely duplicated, all showing positive academic effects with gifted students (see Ablard, Mills, & Duvall, 1994; Armstrong, 1992; Feldhusen, VanWinkel, & Ehle, 1996; Lubinski & Benbow, 1995; Southern and Jones, 1991; Swiatek, 1993; Corazza, Guster, & Edelkind, 1995; Johnsen, 2005; Lupkowski, Assouline, & Stanley, 1990).
Thinking models such as Sternberg’s Triarchic Model (Sternberg, Torff & Grigorenko, 1998) and Paul’s Reasoning Model (Elder & Paul, 2004; Paul & Elder, 2002) have also been found effective in promoting critical thinking for advanced learners. The Triarchic Model includes three components: analytical thinking, practical thinking, and creative thinking. Students are identified in the areas listed and provided instruction based on the strengths of the components. Student achievement gains are slightly higher when using the Triarchic Model than when using other critical thinking approaches (Sternberg, Torff, & Grigorenko, 1998). Paul’s Reasoning Model, although not explicitly tested, is utilized as part of questioning within the William and Mary language, social studies, and science units. Significant gains in literary analysis are shown using the Integrated Curriculum Model coupled with Paul’s Reasoning Model components and modulated questioning. Paul’s model as implanted in the curriculum units for gifted learners provides a scaffolding with which students must support their explanations with evidence, discuss implications and consequences, inferences, assumptions, purpose and goals, and multiple points of view (VanTassel-Baska & Stambaugh, 2006; VanTassel-Baska et al, 1998; Elder & Paul, 2004). Moreover, gifted students respond with more in-depth comments and exhibit higher level skills when teachers utilize open-ended questioning techniques and activities (Hertzog, 1998, 1995).

Creative problem solving models and metacognitive strategies for gifted students have also been researched. Feldhusen (1995) linked metacognition and creativity, finding that creative thinking and creative production requires a combination of metacognitive strategies, a strong knowledge base in a field, and personality variables. Other studies substantiate this view. For example, gifted students are able to use metacognitive strategies in flexible ways and transfer metacognitive strategies to new situations (Carr, Alexander, & Schwanenflugel, 1996). The strategies of twice-exceptional students, those labeled as learning disabled and gifted, resemble those of gifted students when applying metacognitive skills, especially in reading (Hannah & Shore, 1995). A strong knowledge base in the field, translated into creative production, is considered the highest level of Bloom’s Taxonomy (Anderson & Krathwohl, 2001). Although an empirical research-base for creativity is limited due to problems with identifying creatively gifted students (Treffinger, 1986; Torrance & Goff, 1989) many models and curriculum materials exist to assist students with creative problem solving. The most effective programs, based on effectiveness studies include the Purdue Creative Thinking Program, Productive Thinking Program, Creative Problem Solving Program, Creative Studies Project, Imigi/Craft Series, Thinking Creatively, New Directions in Creativity, and the Peabody Language Development Kits (Feldhusen & Clinkenbeard, 1986). Research-based models are recommended as part of a continuum of services to synthesize school improvement and talent development efforts by combining varied levels of services that include a creative component (Treffinger, 1991, 1995, 1998).

Other models for curriculum such as Kaplan’s Layered Differentiated Curricula (Kaplan, 2005), the Parallel Curriculum Model (Tomlinson, Kaplan, Renzulli, Burns, Leppien, & Purcell, 2001), Bett’s Autonomous Learner Model (Betts & Neihart, 1986), Gardner’s Multiple Intelligences Model (Gardner, 1993), and Tomlinson’s Differentiation Model (Tomlinson, 1999) are also widely used as part of a continuum of services. However, effectiveness data on these models is not available to date (VanTassel-Baska & Brown, 2005).
Instructional Strategies

A continuum of services also includes the use of instructional strategies. Strategies such as curriculum compacting (see also Bailey, 1992; Coleman, 2003; Delisle, 1995; Kennedy, 1995; Troxclair, 2000), diagnostic-prescriptive approaches, and higher level thinking were previously discussed as components of specific curriculum models. Additional strategies include the use of problem-based learning, independent or in-depth study, and broad-based themes or issues.

Problem-based learning models first originated outside the educational field and are being widely used in medical training, business, and educational administrations. Within the past decade problem-based learning has slowly emerged in gifted education predominantly in the areas of science and social studies. Problem-based learning is comprised of four components: an ill-structured problem, substantive content, student apprenticeship, and self directed learning (Gallagher, 1997). Science studies relay the effectiveness of problem-based learning approaches for gifted students as promoting content acquisition, in-depth understanding, retention of important content and concepts in biochemistry (Dods, 1997), and experimental design (VanTassel-Baska, Bass, Ries, Poland, & Avery, 1998). Problem-solving skills in science also improve when utilizing a problem-based learning model in a secondary gifted classroom (Gallagher, Stepien, & Rosenthal, 1992). Furthermore, students and teachers report being highly motivated when teaching or learning through problem-based learning models (VanTassel-Baska et al., 1998). Problem-based social studies units for gifted students based on the Salem witch trials, Hiroshima, and other controversial historical events were also found to be effective for content acquisition when compared to traditional lecture courses and student performance on standardized achievement tests in social studies (Gallagher & Stepien, 1996). Data using problem-based learning provides achievement gains for low income and minority gifted students as well by providing challenging scenarios, in-class practice, and hands-on learning to better meet their needs and help them reach their potential (Gallagher, 2000).

Independent study options based on student interests have also been found to be effective for gifted students, especially when embedded within the Schoolwide Enrichment Model and combined with curriculum compacting (Renzulli & Reis, 2003; Herbert, 1993; Reis, Westberg, Kulikowich, & Purcell, 1998; Reis & Renzulli, 1992). Students who illustrate mastery in a specific content area prior to instruction may select an area of interest to pursue independently. Students who compact out of material already known perform as well or better on assessment tests on the content as students who were not compacted (Reis et al., 1998; Stamps, 2004; Westberg, 1995). Furthermore, students who have experienced independent study options or research-based activities in fourth through sixth grade report that their research experiences have positively impacted their post-secondary plans for career development and desire for creativity (Herbert, 1993).

Other practice-based literature combining curriculum compacting and independent study abound as an appropriate instructional strategy for gifted students (e.g., Clark, 1989; Johnsen, 2005; Winebrenner & Berger, 1994; Winebrenner, 2003; Moore, 2005; Johnsen & Johnson, 1986; Bailey, 1992). However, teachers must not assume that gifted students are able to complete an independent study after curriculum compacting without support as gifted students in one study had difficulty with exploring and forming a focus for their independent study project (Bishop, 2000).
Broad-based issues and themes as utilized with advanced content and processes are central to the Integrated Curriculum Model (VanTassel-Baska, 2003). Other models, such as Kaplan’s Grid (2005), combine process, content, and product options to layer the curriculum and connect it to an overarching theme that spans various disciplines. Although little research is available regarding the effectiveness on student achievement when using broad-based themes, the practice-based literature and tacit knowledge within the field of gifted education encourages connecting content to a larger issues or interdisciplinary connections as a way of providing depth and complexity in the curriculum (Kaplan, 2005; Riley, 1997; Swartz, 1991; Hollingworth, Johnson, & Smith, 1998; Taradash, 1994; Lyublindsage, 1997; Impson, Lynam, & Reiter, 1995).

Other processes and practices intended to assist schools with the implementation of a continuum of services have been suggested in the practice-based literature. When planning a continuum of services for gifted learners, a scope and sequence of advanced skills and content knowledge based on thinking processes and state or national content standards should be incorporated (Maker & Nielson, 1996; Clark, 2004; VanTassel-Baska, 2003). In addition, curriculum development processes by a school district leadership team may be incorporated based on the following processes of planning: conducting needs assessments, installing a curriculum development team, piloting, field testing of curriculum, implementation, evaluation, and revision of the curriculum based on effectiveness data (VanTassel-Baska & Stambaugh, 2006).

When considering a continuum of services, a scope and sequence must be considered for each area in which a student is identified including the typically overlooked areas of visual and performing arts and guidance or counseling services (NAGC, 1998). There is a paucity of empirical data for visual and performing arts programs for gifted students. Most of the literature focuses on identification in the arts using a particular instrument (e.g., Clark & Zimmerman, 2001; Kettle, Renzulli, & Rizza, 1998) or ideas to incorporate the arts within an existing program or extra curricular option (e.g., Berman, 2003; Bernal, 2003; Black, 1998; Hefner & McGill, 1990; Herman & Kirschenbaum, 1990; Kendrick, 1998; Khatena & Khatena, 1999; Smutny, 2002; & Torrance & Goff, 1990). A descriptive study assessed the drawings of gifted students during specific developmental periods and found that perspective was most affected by age-related ability while other artistic abilities are less influenced by age (Porath, 1993).

Guidance services, although not routinely included as a service for gifted students in many school districts, are considered to be a critical component of a continuum of services (NAGC, 1998). Neihart, Reis, Robinson, & Moon (2002) suggest that gifted students have asynchronous development, may struggle with peer relationships – especially if not grouped, and are more likely to suffer from underachievement, multipotentiality, and perfectionism. However, gifted students are no less “emotionally hardy” than their same-age peers (also in Cross & Coleman, 2000). Most of the struggles gifted students succumb arise due to a mismatch in curriculum, pacing of instruction, or a lack of interest in a subject area. Implications for services related to gifted students include mentorships in a specific content area (Siegle, & McCoach, 2005), assistance with college planning and career choices based on multipotentiality (Berger, 1989), bibliotherapy targeted at specific issues gifted students face (Halstead, 2002), instructional strategies such as grouping and curriculum compacting (Neihart, Reis, Robinson, &
Moon, 2002) and the inclusion of emotional and affective issues within a core content course area (Johnsen, 2002; Nugent, 2005). Furthermore, gifted minority students and gifted students of low income may be at a greater risk for underachievement, negative peer pressures, feelings of isolation, sensitivity about feeling different and consequently gifted program attrition (Ford & Harris, 1997; Ford, 1996). Herbert (1998) studied gifted African American males in an urban school and found that inappropriate counseling and classroom placement and an inappropriate match to curriculum led to the students’ underachievement problems and recommends training counselors for working with minority students. Consequently, guidance services within a continuum of services for gifted students must be sensitive to the individual needs of gifted students and tailor guidance services specifically for them (Neihart, Reis, Robinson, & Moon, 2002; NAGC, 1998).

Organizational Arrangements

When planning a continuum of services, placement options for varied students are paramount and receive much attention in the literature. Reviews of empirical data on placement or organizational options provide strong evidence for grouping, diagnostic prescriptive approaches, and accelerative learning opportunities.

Ability grouping may appear in different forms for gifted students such as cluster grouping, self-contained classrooms for gifted learners, in or out-of-classroom flexible grouping, grouping based on interest or acceleration, and weekly pull-out programs. Rogers (1998) conducted a meta-analysis on grouping. Findings indicated the following:

1. Advanced students benefit academically from being grouped together. Low-ability students also benefit but not as much as high-ability students.
2. Homogeneous ability groups are academically beneficial to all ability levels when compared to heterogeneous groups.
3. Small group learning produces higher academic achievement gains than whole group learning.
4. Grouping for grouping’s sake produces little achievement gain. In other words, if students are grouped but no curricular modification is carried out, there is little academic achievement effect.
5. High ability and low ability students benefit more from social interactions with their own intellectual peers when compared to heterogeneous groups.
6. Low ability students actually act out less and participate more in discussions when they are grouped with intellectual peers. However, low-ability students acquire more self-confidence about their abilities when placed in mixed-ability groups.
7. Low ability students may benefit more academically when paired with a high-ability student, but high ability students do not show the same benefits.

Furthermore, the highest achievement gains for gifted students in order of effectiveness as determined by Rogers’ meta-analysis (1998) include:

1. Regrouping for specific instruction based on student needs and differentiation approaches (also in Swiatek, 1993);
2. Pull-out programs linked to core content that is expanded upon from the regular classroom (also in Vaughn, Feldhusen, & Asher, 1991; Clements & Burns, 2000; Roberts, Ingram, & Harris, 1992);
3. Cluster grouping within a classroom based on targeted student needs and differentiated strategies that are employed (also in Coleman, 1995; Dexter, 1998; Gentry, 1999; Gentry & Owen, 1999; Teno, 2000; Landrum, 2003; Gentry & Keilty, 2004);

4. Self-contained classrooms in which gifted students are grouped together for all core content instructional areas – especially at the elementary level; and

5. Pull-out settings in which creativity or critical thinking are the emphasis.

When grouping gifted students together, student achievement is most impacted when differentiation strategies are incorporated (Slavin, 1990, 1993; Kulik & Kulik, 1992; Rogers, 1998, 2002). Moreover, when grouping gifted students, homogeneous grouping elicits more positive interactions, pro-social feedback, and constructive types of knowledge exchanges more often than when in heterogeneous groups (Lando & Schneider, 1997; Cohen, Duncan, & Cohen, 1994) although a small dip in self-esteem may be present when gifted students are first grouped homogeneously (Gross, 1994). Other studies focused on self esteem and student perceptions when in a homogeneously grouped model suggests that gifted have a higher or similar self-esteem as non-grouped students but perceive homogeneous grouping differently based upon the difficulty of the assignments, personal desire for challenge, the service model employed, and the number of friends not in gifted programs (Adams-Beyers, Whitsell, & Moon, 2004; Feldhusen & Nimlos-Hippen, 1992; Field, Bernal, & Goertz, 2001; Hishinuma & Nishimura, 2000; Hoge & McSheffrey, 1990; Moon, Swift, & Shallenberger, 2002; VanTassel-Baska, Willis, & Meyer, 1989). Likewise, gifted students who are homogeneously grouped possess a higher desire for achievement, college aspirations, and reports from family indicate positive influences based on programming when enrichment and accelerative options are implemented (Feldhusen, Sayler, Nielsen, & Kolloff, 1990; Moon, 1995; Moon & Feldhusen, 1993). However, gifted Black students participating in self-contained classrooms had higher attrition rates (Rose, 2001).

Acceleration practices are also critical processes to employ when providing a continuum of services. Reviews of the literature on acceleration have appeared with some regularity. Each review has carefully noted the overall positive impact of acceleration on gifted individuals at various stages in the life span. Successful programs of acceleration have demonstrated the significant positive impact on the learning of students from using accelerative practices including early entrance, diagnostic prescriptive approaches and advanced content (Swiatek & Benbow, 1991a, 1991b; Gross, 2004; Reis, Gentry, & Park, 1995).

Longitudinal studies and numerous reviews of the literature continue to show positive results in cognitive development from acceleration, and no negative effects on social emotional development (Colangelo, Assouline, & Gross, 2004). A recent report, entitled, A Nation Deceived, suggests that gifted learners are cheated out of meaningful learning by schools if they are not allowed to accelerate (Colangelo, Assouline, & Gross, 2004). Likewise, Brody and Benbow (1987) reported no harmful effects of various forms of acceleration, including grade skipping and advanced course taking, among the Study of Mathematically Precocious Youth (SMPY) students subsequent to high school graduation. Accelerated students generally earned more overall honors and attended more prestigious colleges. Richardson and Benbow (1990) and Swiatek and Benbow (1991b) subsequently reported no harmful effects of acceleration on social and emotional development or academic achievement after college.
graduation. Janos, Robinson, & Lunneborg (1989) reported no detrimental effects of
celeration on young entrants to college. In another study, Robinson and Janos (1986) found
similar adjustment patterns for early entrants in comparison to three equally able non-
celerated comparison groups, noting only unconventionality as a distinguishing characteristic
of the early entrants. In another study of female-only early college entrants, positive
personality growth during the accelerated first year of the program was found (Cornell,
Callahan, & Lloyd, 1991). Brody, Assouline, & Stanley (1990) found that among accelerated
students the best predictor of college achievement was early and continued Advanced
Placement course-taking, suggesting that advanced challenging work on an ongoing basis is a
powerful inducement to later achievement. Finally, Rimm & Lovance (1992) interviewed
families and school personnel of students who were grade skipped. All parents indicated that
they would make the same decision again and administrative attitudes toward acceleration
became more positive.

Well-researched accelerative options include (VanTassel-Baska, 2004a; Guenther,
1998):

- early entrance to school (Braymen & Piersel, 1987),
- grade skipping (Swiatek, 1993, 2000; Lubinski & Benbow, 1987; Rimm &
  Lovance, 1992),
- entering college early – with or without a high school diploma (Swiatek, 1993,
  2000; Lubinski & Benbow, 1987; Murator, Colangelo, & Assouline, 2003),
- post-secondary options (Southern & Jones, 1991; Myers, 1993),
- International Baccalaureate Programs (IB) (Nugent & Karnes, 2002; Cox & Daniel,
  1983; Poelzer & Feldhusen, 2002; Tookey, 1999; ),
- Advanced Placement (AP) (Surry, MacDonald, & Morgan, 1999; Herr, 1993;
  Nugent & Karnes, 2002; Subotnik & Strauss, 1994; VanTassel-Baska, 2001),
- content or subject acceleration (Swiatek, 1993, 2000; Lubinski & Benbow, 1987;
  Feldhusen & Kennedy, 1989; Herr, 1993),
- telescoping the curriculum (completing a one year course in one semester or
  completing a course in less time based on pre-assessments) (Swiatek, 1993, 2000;
  Lubinski & Benbow, 1987),
- credit by examination (Surry, MacDonald, & Morgan, 1999; Herr, 1993; Nugent &
  Karnes, 2002; Subotnik & Strauss, 1994; VanTassel-Baska, 2001), and
- individual tutoring or mentorships in advanced subject matter (Ambrose, Allen, &
  Huntley, 1994; Beck, 1989; Davalos & Haensly, 1997; Goh & Goh, 1996; Herbert
  & Olenchak, 2000; Chan, 2000; Goh, 1993; Prillaman & Richardson, 1989;
  Subotnik, 2003).

Magnet schools for the gifted are also often considered an acceleration strategy
(Adcock & Phillips, 2000; Cross, Steward, & Coleman, 2003; Daniel, 2000), although the
outcomes are dependent upon the focus of the school. Studies are mixed regarding the
effectiveness of such schools. One study found that students in a magnet school did not
perform any better than those in nonmagnet schools when comparing similar high ability
students (Adcock & Phillips, 2000). Perceptual data seem to be the strongest indicator of
success for magnet schools as many students found the social aspects of the school to be the
most important (Cross, Steward, & Coleman, 2003; Plucker, Cobb, & Quaglia, 1996; Cohen, 1997; Gentry, Rizza, & Owen, 2002).
Regardless of the available research, acceleration is still one of the most under-utilized practices for gifted students even though it is one of the most effective and economical choices for schools to employ (Colangelo, Assouline, & Gross, 2004; Southern & Jones, 1991).

**Student Performance and Program Evaluation**

Organizational structures and curriculum are only part of a continuum of services. Data regarding student performance and program effectiveness must also be considered. Longitudinal studies of student growth gains on standardized achievement assessments indicate that students who score in the upper quintiles on standardized achievement tests show the least amount of growth over time and may be the at the greatest risk for underachievement (Sanders & Horn, 1998). Based on multiple database searches, little empirical evidence is available on the assessment of gifted students once identified. Of the literature available, data suggest that diagnostic prescriptive approaches to assessment, as tailored to the needs of gifted students are most effective (Swiatek, 1993, 2000; Benbow & Lubinski, 1995) especially if the assessment measures conceptual ideas (Bass & Ries, 1995). Furthermore, multiple measures for assessing student learning should be emphasized at formative and summative stages of the instructional development process. Examples of assessments that may be utilized specifically for gifted students include rubrics, portfolios, performance-based, and standardized measures including out-of-level assessments (VanTassel-Baska, 2003; VanTassel-Baska, Johnson, & Avery, 2002; Feng, VanTassel-Baska, Quek, Bai, & O’Neill, 2005; Siegle, 2002; Treffinger, 1994, Kress, 1994). Teacher expectations combined with varied alternative assessment options also have a positive impact on gifted students (Baker & Schacter, 1996). Additionally, these assessments have also been especially useful in calibrating the performance of disadvantaged and minority gifted students (Passow & Frasier, 1996; VanTassel-Baska, Johnson, & Avery, 1998).

The paucity of literature regarding empirical evidence for gifted student learning is also pronounced in program evaluation studies (Avery & VanTassel-Baska, 2001; VanTassel-Baska & Feng, 2004). Program evaluation studies reveal a mismatch between identification and programming, a lack of equity and consistency across programs and services within and among districts, and a lack of coherence in service delivery by levels and subjectiveness. Moreover, patterns across multiple district evaluations suggest a paucity of data regarding student progress, fragmentation of services, a lack of targeted intervention for special populations of gifted learners, as well as the lack of systematic staff development (Avery & VanTassel-Baska, 2001; VanTassel-Baska & Feng, 2004).

**Administration and Change**

A continuum of services requires the effective administration of gifted programs and the implementation of change processes. This includes professional development, policy development, and the leadership qualities of the administrator. Guskey (2000) suggests that professional development activities should range from simple to complex and include evaluation of participant reactions, the level of participant learning, the level of organizational support and change, participant use of knowledge and skills presented, and the impact on student learning outcomes. However, studies in differentiation suggest that few teachers provide differentiated opportunities for gifted learners in the regular classroom without targeted, ongoing professional
development (Westberg, Archambault, & Brown, 1997; Reis & Westberg, 1994), leadership, mentoring, and resources (Johnson, Haensly, Ryser & Ford, 2005). Additional studies support the need for incorporating professional development as part of an ongoing process that is linked to the regular classroom and incorporates a systematic model of monitoring, modeling, and connecting professional development to the individual classroom as well as district initiatives, goals, and accountability (VanTassel-Baska, 2004; Joyce & Showers, 1988; Tomlinson & Allan, 2000; Kaplan, 1986; Renzulli, 2001; VanTassel-Baska, 1997). This infers that leaders who desire to implement a continuum of services for the gifted must have available resources, collaboration time, and content specialists who can assist teachers and students with sophisticated content knowledge (Tomlinson & Allan, 2000). In addition, there is an increased emphasis on promoting diversity in gifted education including professional development and awareness of the needs and issues of minority gifted students and special populations of gifted students such as low socio-economic and twice-exceptional (Rizza & Gentry, 2001; Grantham & Ford, 1998).

Policy Development

Decision-makers and leaders wanting to implement a continuum of services also need to incorporate policies that support service provisions for gifted students within a grade level and across multiple grade levels. However, policies related to comprehensive gifted programming and services are minimal across the United States (Karnes, 2003; VanTassel-Baska, 2004b; Brown, VanTassel-Baska, Avery, Worley, & Stambaugh, 2005). Gallagher (2002) lists four recommendations for districts and states to incorporate when considering policy implementation: 1) multi-dimensional identification; 2) more inclusive placement procedures – especially for International Baccalaureate and Advance Placement programs; 3) differentiated programming of content including a continuum of services; and 4) a greater level of program evaluation and accountability. In addition, policies related to curriculum within a continuum of services are necessary and include flexibility of the curriculum to better meet the diverse needs of gifted learners; differentiation in curriculum, instruction, and assessments that is research-based, acceleration experiences; articulation and alignment of services throughout the child’s K-12 experience; grouping policies based on best practices; and teacher development to support the necessary training to implement policies and a continuum of services for gifted learners (VanTassel-Baska, 2005).

Leadership Role for Continuum of Services

Leading gifted programs and incorporating policies for gifted learners related to a continuum of services requires “leadership in the middle” on the part of the gifted coordinator. Many times the coordinator may have little power or authority but increased levels of responsibility for service implementation. Therefore, leaders of gifted programs must be able to communicate with decision makers: being clear on intentions, considerate of decision makers time, and provide useful information and program data in a concise way (Hunsaker, 2000). Furthermore, the leader of a continuum of services for the gifted must wear many hats including that of staff developer, myth dispeller, data collector, and instructional leader (VanTassel-Baska & Stambaugh, 2006). An in-depth survey of principals also indicates that leaders who are most effective at the secondary level perceive themselves as being passionate about their work, independent, intelligent, motivated, and possess the skills of goal setting, originality, flexibility, and a wide range of interests (Goertz, 2000).
Administrators of gifted programs must also be mindful of the appropriate selection of curriculum materials (Avery & Zuo, 2003; Johnson, Boyce, & VanTassel-Baska, 1995; Halsted, 2002) and the appropriate evaluation of curriculum units written specifically for gifted learners (Purcell, Burns, Tomlinson, Imbeau, & Martin, 2002; VanTassel-Baska & Little, 2004; VanTassel-Baska & Stambaugh, 2006). Guidelines for the selection of curriculum materials include the delivery of substantive content that addresses major conceptual concepts in a given field; use of the “habits of mind” that provide experiences for students to practice the habits of experts in a field or discipline, the opportunity for students to generalize across content areas, and a climate conducive to inquiry and high levels of thinking and engagement so students may construct meaning within a given field (Avery & Zuo, 2003).

Leaders who implement changes in the provision of services for gifted learners must recognize the levels of the change process and how change occurs. Fullan (1999) describes the change process in three phases: initiation, implementation, and institutionalization. After districts have been initiated into the practice to be implemented based on systemic and targeted professional development, they move to the implementation phase of practice and may experience an implementation dip before seeing positive results in student data and teacher effectiveness. Once success has been noted by teachers and students, the change may become institutionalized, meaning that the change is part of the system or “way of doing things” within the district. Leaders who are able to institute change effectively are able to build capacity, establish a vision or moral concern for the cause or change, and celebrate small successes (Fullan, 1999).

**Conclusion**

Based on the empirical data and literature-based references, the need for a continuum of services is well-documented in the literature although few states or local districts employ a full range of service options, K-12. Empirical evidence within the field of gifted education supports specific curriculum interventions such as the William and Mary units in language arts, social studies and science, the diagnostic-prescriptive approaches utilized in mathematics and science, mentorships, problem-based learning, and independent study linked to targeted pre-assessment and the Schoolwide Enrichment Model. The strongest evidence for a continuum of services emphasizes multiple grouping options and acceleration models coupled with differentiation and rigorous, research-based curriculum. Although there are no empirical data, the literature supports the use of a scope and sequence of gifted services, linked to rigorous content objectives, derived and accelerated from content standards within a district framework. Furthermore, leaders cannot ignore the need for a vertical and horizontal continuum of services in all areas of the curriculum in which students are identified as gifted including the arts. Guidance services are also important when considering service options for gifted students, especially with diverse populations.

There is a continued need for student achievement data specific to gifted as well as program effectiveness data. Specifically, a continuum of services must match the identification methods employed and districts need to provide meaningful, research-based services for the various levels of identification. In addition, leaders of gifted programs must provide systemic and targeted professional development regarding rigorous curriculum models related to a
continuum of services, educate the staff regarding issues related to diverse populations of gifted, and implement policies regarding curriculum rigor, acceleration, grouping, and levels of services among and across grade levels.
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Section III

District Case Studies

By Elissa Brown
and Tamra Stambaugh
Section III: Case Studies

Introduction
From March 20 to April 20, 2005, members of the research team at The College of William & Mary, Center for Gifted Education visited five school districts to gain an in-depth understanding of the provision of a continuum of services for gifted learners. The districts represented different geographic regions from the state of Ohio.

Purpose
The case studies align with the goals from the State of Ohio Continuum of Services Grant project objectives and serve as an in-depth qualitative data source that provides another lens from a district perspective as to the implementation of services for gifted students within the selected partnership districts.

Research Questions:
The on-site visit consisted of focus group sessions and interviews. A document analysis of relevant pieces supplied by the district was conducted off-site. For the focus groups and interviews, a similar set of questions were asked of each stakeholder’s group and interviewee. Six questions were asked:

1. What are the different ways in which gifted students are served in your district?
2. How do you differentiate curriculum & instruction for gifted students in your district?
3. What are the strengths of the gifted services your district employs?
4. What are barriers or limitations which prevent the provision of a comprehensive continuum of services for your gifted students?
5. How do you know your gifted continuum of services is effective? What criteria are you using to make this judgment?
6. How do you assess gifted students’ performance? What criteria are you using to make this judgment?

Data Analysis Procedures
The six questions probed all participants via oral commentary and written responses. Data were recorded during the oral sessions by team members, and written response cards were collected and recorded. The comments analyzed according to the criteria of multiple responses which were consistent within groups and patterns which emerged across groups. In general, an illustrative response represents a consensus by 50% or more from a group with regard to each specific question.
Data Collection Description

Document Review

Each district was asked to submit curriculum units, policies, program goals, staff development brochures, scope and sequence information, or other pertinent documents. Documents were reviewed by the Center for Gifted Education personnel as submitted. A copy of the document review protocol is listed in Appendix A.

This document review protocol was developed by the Center for Gifted Education to be used as a guide when examining documents. It ensures the consistency of the criteria applied in the review process. The form is composed of two parts, with the first part concerning the general evaluation of the document in terms of its purpose, intended audience, and relationship of the document to the gifted education program. The second part evaluates the quality of the document with regard to its alignment with best practices in gifted education, the sufficient scope and depth to represent program intent, the clarity and consistency in its statement of theoretical framework (if applicable), and user-friendliness.

Focus Group

Each participating district contact person was asked to coordinate focus groups of 6-12 persons for each of the following stakeholder groups: administrators, teachers, and parents. Student focus groups were also requested by certain individual districts and included as another data source. Focus group questions were open-ended standardized questions, meaning that there were uniform questions developed for each specific group of teachers, students, parents, and administrators. The questions were aligned with the objectives and focus questions of the grant project, although the questions were modified for each group. Follow-up questions were asked based on stakeholder responses in order to better understand and represent what the stakeholders were expressing.

Each focus group lasted from 45 minutes to an hour. Participants were given an overview of the purpose of the focus group and an index card for each question to be asked. The focus group leader would read a question and allow time for each participant to individually reflect on the question and respond, using the index card. Whole group discussion was led after personal reflection and the index cards with participant responses were collected for each question. A total of six questions were asked to each group, following the same process. A copy of the focus group template questions for each group is provided in Appendix A.

Individual Interviews

Individual interviews were conducted to solicit the unique perspectives of key stakeholders. The persons to be interviewed varied by district and included the coordinator of gifted, administrators, the school superintendent, or central office personnel. In some districts, interviews were declined or not arranged as key personnel chose to participate in the focus group instead. Individual protocols for interviewing were developed, as provided in Appendix A. The interview was tailored for each participant’s role, and follow-up questions were determined based on participant responses.
Report on Antwerp Local City School District On-Site Visit
Antwerp, Ohio

On April 6, 2005 a member of the William and Mary research team spent the day in Antwerp Local School District to examine the continuum of services provided within the district. The case study activities included:

- Administrator focus group
- Teacher focus group
- Parent focus group
- Individual interviews (2): Superintendent and District Gifted Coordinator
- Collection of relevant documents related to the continuum of services to be analyzed

Overview of Service Model(s) Employed in District

Antwerp Local has two distinct service options for identified gifted students. In 2nd–6th grade classrooms, a pull-out enrichment model is employed with gifted students and in grades 7-12, students are heterogeneously grouped in regular classrooms with no subject grouping. At the high school, there are no honors courses or AP courses available. High school students do have the option of post-secondary enrollment but at the time of the on-site visit, no student had taken advantage of it during the 2004-2005 academic year. Antwerp Local is a K-12 school with 1 building. All students in the district are located in the same facility. The pull-out model in grades 2-6 varies in terms of contact time with the gifted resources specialist. In grades 2-5, the specialist sees the students for 1 hour/week and in grade 6, her contact time with gifted students is 40 minutes per week. The gifted resource specialist employs interdisciplinary enrichment based units based on the Ohio content standards. Gifted students are encouraged to participate in extra-curricular competitions and events that enrich their school experience. All students who are served have written education plans that are intended to guide their array of services. These plans are required by Ohio regulations.

Document Analysis:

The following relevant documents were submitted for review:

- A sample Written Education Plan (WEP)
- Gifted Identification and Services Handbook for Teachers
- Antwerp Junior/Senior High school student handbook with course descriptions

Sample Written Education Plan

The sample WEP that was submitted for review was for a high school student. The service option checked on the front sheet was “regular class, not clustered.” This student’s areas of interest included technology, reading, and community and his areas of strengths were cited as working with peers and technology. According to this WEP, this student’s identified areas were cognitive ability and reading achievement and science achievement. For each identified academic area a teacher has to complete a section on the form entitled, differentiation of instruction. In order to differentiate in the reading/language arts classroom, the teacher wrote that the student will complete a research project and independently read two literary works from the studied time periods. For science differentiation, the teacher wrote that the student would
complete the higher level questions from the homework problems and carry out an advanced lab. Appropriate signatures were provided on the form.

*Gifted Identification and Services Handbook for Teachers*

The handbook for teachers prepared for Antwerp Schools begins with a welcome letter to teachers. Following the letter is a section on identification taken from the Ohio Revised Code and the Ohio Administrative Code. The next few pages are formatted as a question/answer section outlining the screening and identification process for the school district. The services for gifted students page cites that “Antwerp Local schools service plan provides for a gifted resource (pull-out) program, cluster grouping in the regular classroom, differentiation of curriculum in the regular class, Post-Secondary Enrollment Option, and Advanced Placement (selected courses). It mentions that students eligible for the pull-out program must be identified in the area of superior cognitive ability and two or more specific academic ability areas and must have WEP’s. The handbook ends with ten tips for helping gifted students succeed adapted from information provided through the Ohio Association for Gifted Children.

*Antwerp Junior/Senior High School Student Handbook with course descriptions*

The fifteen page document provides an overview for students and families for each junior and senior high school class offered. Several of the advanced courses such as AP composition, Calculus, or Latin say “Starnet course offerings” next to the title and description. This was an online learning option for students in the district for over ten years and due to budget cuts, was not offered during the 04-05 academic year, although the course descriptions still remain in the high school handbook.

**Focus Groups:**

Teacher, parents and administrator focus groups were held, each lasting approximately one hour. The focus group results will be discussed individually organized by groups. In addition two interviews were conducted; one with the district Superintendent and the other with the district coordinator of gifted. The relevant participant numbers for each focus group are listed below:

**Focus Group Participants by Number**

<table>
<thead>
<tr>
<th></th>
<th>Teacher</th>
<th>Parent</th>
<th>Administrator</th>
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<td>N=9</td>
<td>N=6</td>
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</tbody>
</table>

**Parent Focus Group**

Six parents were present at the focus group session which was held in Antwerp Local School’s conference room. The parent’s children spanned the gifted program, K-12 and represented a student body of 12. See Table A for illustrative comments for each question.

Parents articulated that the primary service delivery was an enrichment based pull-out model employed in grades 2-6, with contact time ranging from 40 minutes to 60 minutes per week for students identified as superior cognitive and two specific academic areas. Other than the pull-out model, services for gifted students are provided by the regular classroom teacher. In grades 7 and 8, there is no discrete gifted service and at the high school level (grades 9-12), the district does not offer Advanced Placement courses or Honors courses and all content courses are
heterogeneously grouped. Post-secondary option is available but at the time of the interview no student had exercised that option.

The majority of parents were unsure how their child’s needs were being met in the regular classroom. Options such as accelerated reader were mentioned as available, but those educational opportunities were for the whole class and not necessarily targeted for gifted students. Parents whose children participated in the pull-out model expressed satisfaction with the service and felt that their children received work that was not ordinarily provided in the regular classroom.

The only strength mentioned by the parents was the pull-out model, with sentiments such as “my child does not want to miss school on GATE day,” commonly being expressed. The personnel who are providing the direct service were perceived to be excellent at what they do. Other than that, the parents did not share any other strengths.

There was much frustration expressed about the lack of a program and the potential barriers that prevented a more comprehensive array of services.

**Teacher Focus Group**

Eight teachers and one guidance counselor were present at the focus group session which was held in Antwerp Local School’s conference room. The educators spanned the gifted program, K-12. See Table B for illustrative comments for each question.

Teachers across the K-12 spectrum articulated Antwerp’s service model as an elementary pull-out program in grades 2-6, classroom differentiation, and opportunities for competitions and extra-curricular activities. High school teachers mentioned that certain students double up in their math and science classes in order to take Calculus and that post-secondary options exist but that students have chosen not to take advantage of this option due to distance of the community college and a dangerous highway. Teachers shared that many students participate in competitions and events, and that these were open to all students, not targeted specifically for gifted. They felt that students’ needs were being met in the regular classroom through teacher’s questioning, project alternatives, and high expectations.

The biggest strength of Antwerp’s program as perceived by the teachers was the committed staff. “There is a high expectation for student performance across the board.” They mentioned teacher’s challenging students and knowing the students because it is a small district and “family” oriented. They shared that the program emphasis is on practical application and because of that students are engaged in the use of technology, field trips, and visits to colleges. Another perceived strength was the identification process, because “it is defined.”

The largest barrier to service delivery was limited resources. “Due to limited resources, we cannot offer higher level options for these students.” They mentioned that 7.8% of the community held a Bachelor’s Degree and therefore it was difficult for the district to provide role models for higher education. Another barrier was the lack of teacher training for serving gifted and talented students. Lastly, they shared that the contact time for students was minimal and needed to expand.
In terms of program effectiveness, teachers shared that benchmarks for them were how well the students scored at the advanced levels on the Ohio Proficiency tests, the number of students who received awards of merit, and high graduation rates. “We have above a 95% graduation rate and given the community context, this is unusual.” Additionally, they shared that students in the pull-out enjoy going and do not want to miss school the day of the week that they receive GATE services. Teachers felt that students were growing and learning through their class leadership, “serving as role models for others.”

Administrator Focus Group

Three administrators were present at the focus group session which was held in Antwerp Local School’s conference room. The administrators were made up of 1 elementary principal, 1 principal for grades 7-12, and 1 director of instruction. Due to the limited numbers of administrators, the focus group session was conducted as an interview session.

The interview session with the three administrators lasted approximately 45 minutes to address the six questions of interest. The administrators described the program as being in transition. They mentioned the pull-out GATE program as well as special opportunities such as the Junior Scholars program being the ways in which gifted students are served.

When asked about services provided within the classroom, one administrator responded with “gifted students are held to a slightly higher standard on certain projects and teachers pace activities where students can move ahead of others and then do enrichment activities.” In addition, they shared that the teachers use the Written Education Plans (WEP’s) to ensure classroom differentiation. They felt that the strengths of the program included effective teachers and the identification process. “Our teachers are willing to try new ideas and implement alternative lesson plans to make sure the students are challenged.” Another administrator responded, “We leverage our few resources by stretching the one GT teacher to more grade levels. We are also able to stretch our intervention specialist to work with the gifted students instead of just the at-risk kids.” Barriers to the program included limited contact time and having only one person to deliver services. “We are so small! It would be nice if the GATE teacher could go into classrooms and demonstrate lessons but she is stretched too thin.” Another administrator added, “Teachers are left on their own to meet the gifted students needs and so it’s hard because the implementation is left up to them.” In terms of program effectiveness, the administrators mentioned the Ohio proficiency tests as a measure of effectiveness. “15-67% of our students score in the advanced category.” They also shared that graduates come back and informally provide positive feedback of being “prepared for freshman year of college.”

Interview with District Coordinator

Dr. Elissa Brown interviewed the district coordinator of gifted services for Antwerp Local: Ms. Sandy Freeman. The interview last approximately 30 minutes to address the six questions of interest. Ms. Freeman is the coordinator of gifted services for the Western Buckeye Educational Service center and Antwerp Local is one of her school districts. Ms. Freeman described the services for gifted students in Antwerp as follows: K-1 differentiation within the classroom, 2nd-5th pull-out model employing interdisciplinary enrichment standards-based curriculum units. Grades 2nd-5th receive an hour a week and 6th grade students receive 40 minutes
per week. In grades 7th and 8th, she said, “There is no discrete gifted service.” In grade 9th-12th students are in regular classes. The district does not offer any Honors or Advanced Placement courses at the secondary level. In all grade levels, K-12, the district does not employ any cluster grouping or flexible ability grouping. She expressed concerns about the degree to which teachers were differentiating curriculum and instruction. “I don’t see a lot of that. We need more professional development with regard to differentiation. There is no way to monitor whether or not differentiation is occurring.” She felt that the strengths of the program included effective teachers and the pull-out model. She mentioned that the majority of teachers want to provide the best services they can, but they do not always have the necessary tools. The pull-out model, according to Ms. Freeman, serves multiple grade levels and the personnel providing the direct service “are excellent at what they do.” She mentioned that the district does provide a lot of special field trips for students. Barriers to the program included limited contact time and overall support. She felt that it was difficult to have any consistency and daily impact because the gifted staff is spread too thin. She would like to see more contact time for students; “one hour a week is not enough.” She would like more support from the administration and in general from teachers. In terms of program effectiveness, Ms. Freeman mentioned the positive feedback she receives from parents of students who are involved in the pull-out model. She also looks at the achievement scores of students but has not tracked the scores over time. In terms of student growth she mentioned the WEP’s and self and peer evaluation. For students in grades 7-12 that do not receive services, she said, “I’m not sure. There is a lot more education that needs to happen in terms of what constitutes appropriate services for gifted students and we’re a long way from getting there.”

**Interview with Superintendent**

Dr. Elissa Brown interviewed the Superintendent for Antwerp Local: Mr. David Bagley. The interview last approximately 30 minutes to address the six questions of interest. Mr. Bagley has been a superintendent for 18 years. Antwerp Local has an average daily membership of 720 students. The district has one elementary, one middle, one high school and all grade levels, K-12, are housed in one building. Mr. Bagley described the elementary pull-out model as the service delivery model for gifted students. He mentioned that from 1990-2004, the high school offered distance learning classes in many subject areas including advanced math and Latin. Due to budget cuts, the district no longer offers the on-line courses to its student body. He would like to offer them again, but does not think it is likely to happen due to financial constraints. When asked how his teachers differentiate curriculum and instruction for the gifted, he mentioned that teachers integrate technology and provide more options for research, “as teachers provide their lessons, they have parts where the gifted students can go above and beyond.” He felt that the strengths of the program were the identification process and the teachers. “Our strengths lie more in individual classrooms with the teachers providing services than with any specific model.” Another strength he cited was that the all students, K-12, were in one building. “The teachers can really get to know the students and the community by being in one building.” Barriers cited were funding and having a part-time gifted teacher. In terms of program effectiveness, he said that it is not unusual for graduates to come back and tell him that they did not have to study their freshman year of college. He looks at the Ohio proficiency scores and listens to teachers’ responses about these students. “What the classroom teacher provides is key. Everybody working together allows all kids to benefit.”
Findings

The evaluation team reviewed and synthesized all data collected across the sources cited in this case study and provides the following key findings for consideration. Each finding is followed by a data source code. Findings were listed if at least three data sources listed the issue.

<table>
<thead>
<tr>
<th>Key Finding</th>
<th>Focus Group</th>
<th>Document Analysis</th>
</tr>
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<tbody>
<tr>
<td>Program services, goals, and curriculum courses of study need to match the child’s identification areas and include rigorous content. The pull-out program services, in grades 2-6, are enrichment-based regardless of the strengths or identification areas of the student. There is a disconnect between program goals, courses of study listings, and reported services.</td>
<td>T, A, P</td>
<td>DA</td>
</tr>
<tr>
<td>There is an inequity regarding the resources needed to serve the students who qualify for programming. A cut-off number is instituted regardless of other equally qualified students due to a lack of resources to provide services.</td>
<td>T, A, P, I</td>
<td>DA</td>
</tr>
<tr>
<td>Additional professional development, policies for regular classroom service options, and accountability measures are needed for regular classroom teachers who have the bulk of responsibility to serve gifted students. This needs to include rigorous curriculum options in addition to strategies.</td>
<td>T, A, P, I</td>
<td>DA</td>
</tr>
<tr>
<td>K-3 services are needed as well as additional services at the middle school and high school, in order to provide a continuum of services, K-12. Additionally, there is no connection between the pull-out program that is offered in grades 2-6 and the relationship to those grade levels content, instruction, and assessment.</td>
<td>T, A, P, I</td>
<td>DA</td>
</tr>
<tr>
<td>Data is gathered unofficially. Therefore, program effectiveness measures are not systematized.</td>
<td>T, A, I</td>
<td></td>
</tr>
<tr>
<td>Extra-curricular options, such as field trips and competitions were perceived as strengths and as service delivery for gifted students.</td>
<td>T, A, P, I</td>
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Issues to Consider for Recommendations:

The following issues, based on the findings, may be considered and developed into action plans for the district to consider addressing:

- The program services should match the child’s needs and identified areas.
- Resources need to be instituted to include all students who qualify for services at equal levels.
- Teacher variance regarding service provisions needs to be monitored. Teachers need to be given the resources to adjust learning for gifted students in the regular classroom, including more rigorous options.
- K-3 programming should be instituted.
- Low or no-cost options such as grouping and acceleration should be employed systematically within the classroom and across the K-12 spectrum.
- Increase communication to parents and shore up support.
• The coordinator role includes more than gifted responsibilities. The coordinator is also in charge of curriculum alignment, testing, and other ancillary responsibilities that may make it difficult to promote program continuity, growth, and a continuum of services.

• Re-examine the documents in terms of connectivity of program goals, course of study, and policies needed including how those align to the actual services. A scope and sequence of goals and suggested curriculum may tighten the inconsistency of service issues and the perceived lack of rigor.

• Provide professional development opportunities for classroom teachers, K-12, in specific content areas.

• Provide professional development opportunities for administrators and other support personnel.

• Re-examine the junior and senior high services to gifted and create some advanced classes.

• Systematize data gathering (anecdotal and quantitative) in order to measure program effectiveness and student growth.
<table>
<thead>
<tr>
<th><strong>Question</strong></th>
<th><strong>Illustrative Responses</strong></th>
</tr>
</thead>
</table>
| What are the different ways in which your child been served in this district? | • *In the elementary level, they are pulled out for an hour a week.*  
• *At middle and high school, there are no services for gifted students.*  
• *My 6th grader has a once a week additional class on various subjects that are not covered in the regular classroom study.* |
| How are your child (ren) needs being met in the regular classroom? | • *They use accelerated reader books for all level readers.*  
• *I don’t know of anything additional that happens in the classroom.*  
• *I think they may get accelerated math but I’m not sure.*  
• *My child’s teacher has different reading groups.* |
| What are the strengths of gifted services? | • *My 6th grader loves the weekly classes and challenges.*  
• *Teacher qualities are good; enthusiastic and utilizes available resources.*  
• *Strengths? Nothing currently for my high school student.* |
| What are the barriers or limitations that prevent a comprehensive provision of services? | • *One big barrier is there are not personnel to deliver gifted programming.*  
• *There is nothing for grades 7th-12th, and there are limited services for 2nd-6th, so there is not the opportunity to do anything in depth.*  
• *Since nothing happens in grade 7th-12th, they think they are not “gifted” anymore.*  
• *Gifted students do not have a peer group for social interactions.*  
• *We need more challenging work for these kids at all levels in all subjects.* |
| How do you know the gifted program is effective? | • *Informal feedback from graduates.*  
• *When they do participate in GATE, there is growth in their self-esteem.*  
• *He doesn’t want to miss school on GATE day.* |
| How do you assess your child’s learning? | • *Growth in self-esteem as a result of being in GATE.*  
• *He refers at home to information he’s learned at achool*  
• *My daughter realizes that the extra work she’s doing is paying off in terms of her interests and knowledge*  
• *I can’t think of anything. I don’t know.* |
<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
</tr>
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</table>
| What are the different ways in which gifted students have been served in this district? | - GATE program in elementary level; in the high school it is up to the individual teacher  
- There is a pull out program, various field trips, and elective courses in the high school for gifted students.  
- We provide a lot of options for competitions. Our students participate in Quiz Bowl, StarNet, and Power of the Pen. |
| How are gifted students needs being met in the regular classroom?       | - I ask gifted students to assist peers on projects such as technology.  
- Higher level questioning, providing options or alternatives ways of doing problems.  
- I use enrichment worksheets for each chapter and different projects. |
| What are the strengths of gifted services?                              | - Our personnel is our biggest strength. We hold high expectations and challenge our gifted students in the classroom.  
- Technology usage.  
- The pull-out program is strong. Students love going to GATE |
| What are the barriers or limitations that prevent a comprehensive provision of services? | - “Hit or Miss,” some teachers are differentiating and challenging students; others are not.  
- The funding doesn’t follow identification.  
- Time limitations for pull-out program.  
- Not every student who needs service gets service.  
- Limited time, money, and opportunities for these students. |
| How do you know the gifted program is effective?                       | - Students come back from college and say they were adequately prepared.  
- Student’s enthusiasm in going to pull-out.  
- Number of students who score advanced level on achievement tests. |
| How do you assess gifted student learning?                             | - Peer and self evaluation  
- I’m not sure  
- Students ask questions about the enrichment material; seems challenging to them.  
- We use W.E.P’s  
- Class discussions and their written answers on tests. |
Report on Cambridge City School District On-Site Visit
Cambridge, OH

On March 24, 2005 a member of the William and Mary research team spent the day in Cambridge City School District to examine the continuum of services provided within the district. The case study activities included:

- High school student focus group
- Administrator focus group including the superintendent and school psychologists
- Teacher of gifted focus group with coordinator
- Regular classroom teacher focus group, K-12
- Parent focus group
- Collection of relevant documents related to the continuum of services to be analyzed

Overview of Services:
Cambridge City Schools operates under a site-based management structure. Individual schools select how services for gifted may be rendered based upon building needs and capacity. The general services at the elementary school for gifted students begin in third grade, with some exceptions. Two teachers of gifted serve elementary students within the district. One teacher is full-time in one building while the itinerant teacher serves two smaller buildings every other day. Third through fifth graders participate in a pull-out option for anywhere from an hour to half a day per week. One school also offers the opportunity for math acceleration with the teacher of gifted, who uses the same math textbook but moves through it at a faster pace and then supplements with enrichment materials. Students in grades K-2 may be subject accelerated on a case-by-case basis. The teachers of gifted also provide support for elementary teachers as requested or possible within the schedule. Students may also participate in math contests, Destination Imagination, and field trip opportunities.

Services at the junior high level include a full-time teacher of gifted who serves identified students on a voluntary basis. Students select a schedule that allows them to be scheduled into either the gifted course or an alternative program such as computer, art, band, or other special course. Students at the middle school level also have the opportunity to participate in an extra-curricular activity, Ohio Model United Nations. The emphasis at the middle school is on Bloom’s Taxonomy and interest-based instruction and research.

The high school services include Honors classes at the ninth and tenth grade level, and Advanced Placement courses in the 11th and 12th grade years. Beginning next school year, Mock Trial and Ohio Model United Nations will also be available to students as electives for coursework. Students also have ancillary options such as leadership seminars, job shadowing, and academic contests. The coordinator of gifted also provides a support group for high school students with limited academic counseling.

All students who are served have written education plans that are intended to guide their service opportunities. These plans are required by Ohio regulations.
Document Analysis:

The following relevant documents were submitted for review: VISIONS curriculum map overview, VISIONS curriculum activities brochure, vision and belief statements, a sample written education plan, a second grade unit for gifted students on money, a multi-grade unit on the brain, a Bloom’s Taxonomy rubric for independent study, and a rubric and sample lesson from the Mock Trial program at the high school.

All of the documents were teacher or coordinator-made and printed in-house using a basic word processing system. The documents can be categorized as organizational (curriculum map overview, vision and belief statements, written education plan, and activities brochure) and delivery oriented (sample units & lessons). The documents are explanatory and should be understood by the intended audiences. The graphic organizers of the services provide a basic overview of what is offered throughout the district, although it is unclear when the services are offered: each grade year, only high school, etc. Likewise, a comprehensive view of program services and instructional delivery models for each program is not apparent and the documents do not seem to align or reinforce the nature and scope of the gifted program or the intended goals as matched to student identification.

Most of the program opportunities seem to be extra-curricular, with the words “instructional strategies” and “contests” used interchangeably. For example, the major emphasis for gifted students in general, as suggested by the organizational documents, include Mock Trial, Model United Nations, artifact boxes, the NASA Challenger Learning Center, Destination Imagination, the Ohio Energy Project, Ohio Math League, and other contests. Goals for the programs documented did not seem to match the field-specific identification areas and no documents were available to suggest how the goals or objectives are measured.

The organizational documents are broad-based and list mostly statewide activities and field trips in which students may participate. The major emphases of service, according to the documents, are enrichment-oriented with a focus on process skills, even though students are identified in core content areas. Considerable overlap exists between the activities for third through fifth grade, with similar contests and participatory units listed in each grade.

Of the units submitted, two were teacher-created and one was a general lesson plan from a widely disseminated program: Mock Trial. The teacher-created units included materials to be used, target populations, and an evaluation section which suggests that the unit’s success will be evaluated based on student input, teacher observation, and interest. Pre-assessment and activities are mentioned in each unit but not included. The units are written at the knowledge, comprehension, and application levels of Bloom’s Taxonomy, with few exceptions. No evidence exists of the Ohio content standards being utilized or modified. Formal process skill models are not delineated within the units, although goals for such are listed.

Overall, the documents need to be aligned to each of the grade level goals and student areas need identified with relevant outcomes based on known process models and content standards with less overlap. Differentiation between strategies and contests should be outlined along with the distinction between extra-curricular contests versus services in schools. Furthermore, the “canned” curriculum submitted seems to focus more on the higher level of
Bloom’s Taxonomy and provide a better match for gifted students. Many of teacher-created units focus on lower-level activities and questions than typical for gifted.

**Focus Groups:**

Student, teacher, teacher of gifted, administrator and parent focus groups were held, each lasting approximately one hour. A total of 34 persons participated across all five focus groups, including one in absentia who submitted handwritten responses to the questions. The same protocol was used for each group, but wording differed based on the stakeholders being interviewed. The focus group procedures consisted of the facilitator providing an overview of the purpose of the group and the questions to be asked. Each participant was given an index card and asked to respond to a given question. After the participants had time to respond individually, cards were collected by the facilitator and whole group discussion was solicited and reported on chart paper. This procedure was conducted for each of the six questions.

The focus groups results will be discussed individually. Typically interviews are held with key administrative personnel in addition to the focus groups. However, in this instance, the superintendent and coordinator of gifted services preferred to participate in a focus group instead of a personal interview. The relevant participant numbers for each focus group are listed below:

<table>
<thead>
<tr>
<th>Focus Group Participants by Number</th>
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<tbody>
<tr>
<td><strong>Student</strong></td>
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<td>N=6</td>
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**Student Focus Group**

Six students arrived at the high school prior to the start of the school day to participate in the focus group: 3 girls and 3 boys. The students who participated were part of a student advisory club for the gifted program and have had experience in the varied types of services provided since elementary school. Table C outlines illustrative comments for each question posed in the focus group.

The students listed contests as the primary way of being served and cited those as being memorable, especially Model United Nations. “At OMUN you get to talk with educated people,” one student stated. Students also alluded to the importance of being placed with other gifted peers in pull-out, even though the regular classroom teachers weren’t that responsive to them leaving the classroom. Most of the students could not remember what they did in pull-out, only that they were with other gifted students. One student commented “Being with other gifted kids is important, like in the elementary school when we had VISIONS Day.”

Regarding how their needs are being met in the classroom, most of the students said that it didn’t happen often but they knew when it did because in those classrooms they had to study or work at something and they usually enjoyed the class because it was something new to them.

The students appreciate the varied opportunities available to them through contests, especially Model United Nations, which all of them are actively involved. They see Model UN and the other field trips and contests as strengths for the program because they are from a rural,
poverty area and it is helpful to travel to different places and be exposed to other students. One student commented that “Being from Cambridge School System we don’t have much but the teachers push us to do more”, specifically talking about contests and Advanced Placement course options. They were also pleased with the advisement from the written educational plans which allow them an opportunity to better plan for their high school education and future college goals.

The perceived barriers for the students centered on a lack of teacher understanding about gifted and course scheduling issues at the high school. The entire group concurred with the statement by one group participant who said “In elementary school the regular classroom teachers weren’t that understanding when you left for pull-out. They thought it wasn’t important.” However, the students were appreciative of the opportunities provided and the teachers who challenged them, although they said there weren’t many challenges in school. Students also perceived that many teachers did not understand gifted. Furthermore, schedules for advanced classes or other opportunities at the high school overlap and hinder scheduling for advanced classes.

The students rated the program effectiveness based on performance in contests and programs such as OMUN, Mock Trial, and Destination Imagination, although OMUN seemed to be emphasized the most. They reported that they perform well when compared to other students across the state or region who participated in similar contests and they take pride in their abilities and opportunity as spawned from the gifted program. They said that “many people continue to stay in VISIONS throughout high school” which also makes it successful. The students felt like they were learning in many of their Advanced Placement classes and hoped to get into “…higher schools like OUS and Case Western”. The students perceived the opportunities available based on participation in gifted services as beneficial, especially the contests, Advanced Placement classes, and being with other gifted students in VISIONS during elementary school.

Administrator Focus Group

The administrator focus group consisted of a variety of school personnel with high attendance from administration, even though it was the day before spring break. Thirteen persons attended the focus group including the special services director, curriculum director, school superintendent, school psychologist, and elementary, middle, and high school principals or assistants from all but one building: 8 males and 5 females. Sample responses are listed in Table D.

The administrative responses varied somewhat due to services provided in each building or at each grade level. It seems that each building provides services in a different way, with some students being provided accelerated math, other students being provided pull-out only, and some schools with more of a consultation model with some pull-out. The level of service is dependent upon the staff person for gifted, desires of the school personnel, and number of students identified. Regarding the services specifically available, the most common responses included Ohio Model United Nations, Advanced Placement (although not just for gifted), pull-out at the elementary level, as varied by school, and Destination Imagination.

Specific classroom services provided, as perceived by the administrators, included a consultation model, although administrators weren’t sure how much that was really happening in
their buildings. One participant wrote “This is a building level topic/decision and I can’t accurately comment on it. I know the gifted staff works with the regular education staff to put this in place. However, I’m not sure what has occurred.” Other participants perceived that the services provided in the regular classroom really met the needs of gifted students as well, although “the services listed are really for all kids”.

Many suggested that professional development is needed on differentiation as it is perceived that classroom teachers may not know how to best work with gifted students in the regular classroom. The most common strategies within the classroom were cooperative learning, pull-out, and higher level questions. A few administrators also listed the IMS (Instructional Management System), a differentiated lesson plan database from the Ohio Department of Education. In general, however, few administrators could list specific strategies for gifted as observed in the classrooms, especially on a consistent basis.

Regarding the strengths of services, many administrators perceived the strengths to be the number of staff members dedicated to gifted services when compared to other districts. Administrators at the elementary level were also pleased with the change in the structure of staffing. This year was the first year teachers of gifted were specifically assigned to one (or two) buildings. One participant wrote that a positive was “more service than before due to the teachers of gifted being part of the elementary buildings…teachers now feel that the VISIONS teacher is part of the staff.”

Program weaknesses surrounded the major themes of communication and professional development. For example, administrators perceived that parents were actively involved in their child’s gifted education but seemed misinformed regarding the services and issues. It was perceived that the teachers of gifted and regular classroom teachers seemed unclear in the direction and vision of the services provided. Two different participants commented on this issue by stating that the VISIONS staff “do[es] not seem to fully understand the intent” and there is “no set vision for the program”. Other administrators suggested that many of the stakeholders perceive that the “program is only known as fun”. In addition, communication that is relayed seems to be untimely and misunderstood. Many teachers do not understand gifted students and feel that some gifted students are misidentified since little professional development regarding gifted has been available. One administrator suggested that “some regular education staff have been reticent to differentiate and/or consult with the gifted education staff-especially when a student identified as gifted is having academic and/or behavioral difficulties.”

A few administrators also listed finances as a major barrier as the staff members who are serving gifted are mostly locally funded and the student-teacher of gifted ratios are high. Some administrators even suggested adding another teacher of gifted so there is at least one teacher in each building. However, other participants were quick to remind the group that funding issues may not allow this to happen.

When asked about the effectiveness measures of the program and student learning, the administrators were uncertain how student progress was being measured but suggested ways they might be able to monitor progress. Conversation surrounded ideas such as: follow-up studies
with students after high school, parent phone calls and surveys, standardized test scores, program attrition, and grades of gifted students.

In general, the administrators were pleased with the new format of services being more building-specific. However, they were still uncertain regarding the program intent, impact, and need. Communication, professional development, and additional staffing are perceived as the major issues for further discussion.

Regular Classroom Teachers

Seven teachers representing elementary, middle, and high school attended the focus group, all female. Sample responses to each question are listed in Table E.

Teachers listed the services provided by the gifted program by grade level. In grades 2-5 pull-out, math instruction, Destination Imagination, math on the computer, and a science fair were the major service provisions. A discussion ensued regarding a comparison between elementary building services since the building programs were different. Teachers seemed in agreement that the elementary students were typically served for about an hour a week but it varied by building and grade level. The teachers also explained that they really didn’t know how students were served except for the accelerated math program portion of services that is being implemented in one elementary building. This takes approximately 45 minutes per day and the teacher of gifted provides the instruction and letter grade.

When asked about how services are delivered in the regular classroom the teachers suggested the need for more professional development. One participant stated, “I’m not sure of what type of things I could or should be doing to challenge gifted students.” According to the elementary school teachers they differentiate by implementing peer tutoring, study buddies, and asking higher level questions for all kids. Teachers also listed curriculum series that provide enrichment opportunities as well as a new reading series in one building that has an advanced level for reading that teachers could give to gifted students, although no one had used it. At the middle school and high school level, teachers listed that they have advanced classes and pull questions for students from the College Board website for Advanced Placement courses. All teachers agreed that they have high expectations for all students. Most of the discussion for this question centered on a lack of materials for regular classroom students and concerns for finding different activities for gifted students when the regular classroom core content areas lack materials.

The strengths question was discussed orally. Most of the time in the hour focus group was spent on issues and barriers, which left a small amount of time to talk about strengths before the teachers needed to depart. Among the strengths listed as a whole group, the most common and agreed upon strength at the middle school and high school was the change in the staffing. Teachers appreciated having a full-time gifted teacher in the building or at least a half time since one elementary teacher of gifted travels between two schools. Other strengths included the involvement of the students in OMUN and Mock Trial. The middle school and high school teachers perceived the students who participated in special contests as “energized and excited”. The high school teachers also found it beneficial that the coordinator of gifted programs assisted with Advanced Placement courses through educational plans that encourage students to join AP
and assistance with AP paperwork. Questions 5 & 6 regarding assessment were not discussed due to the length of the barriers discussion.

Overall, the major issues for regular classroom teachers involved a perceived lack of communication and a common understanding of gifted services. For example, the elementary and middle school teachers are unsure of what happens in the gifted program when students are pulled out of the classroom. They desire more communication from the teacher of gifted regarding what students are doing. Furthermore, students seem to miss classes in areas for which they are not identified, making it more difficult to make up the work missed. In the middle school teachers felt that programming for gifted was unfair because students who participated in the VISIONS program had to select either VISIONS, art, music, or other electives, making the choices difficult.

Teachers were curious about what standards the teachers of gifted follow, what their curriculum involves, how the gifted curriculum matches the regular curriculum, and how students are identified. There are concerns that some of the students identified are actually failing certain courses but continue to be pulled out for services. The middle school teachers also requested a list of students who are identified as they do not seem to know who the gifted students are and in which areas they might have strengths. Suggestions were also given for better service delivery, scheduling, communication, professional development, and organization of curriculum and advanced courses between the middle school and high school for those students who need acceleration.
Parent Focus Group

Three parents of gifted students attended the focus group. The triad represented VISIONS students from three different schools and had children in 2nd, 3rd, 5th, and 6th grade, all in the VISIONS program. One parent submitted responses in writing, which were also correlated with the data. Due to the informal nature of the meeting and comfort level of the parents, after the second question, participant reflections were listed on chart paper instead of index cards at the parent requests. Index cards were used to jot ideas.

Similar to the regular classroom teacher focus group, most of the focus group time was spent on the barriers. Questions were raised regarding gifted services, identification, and Ohio rules. Table F represents the varied responses from the participants.

Parents noted several barriers regarding programming and services. Most of the issues were related to a lack of challenge in VISIONS and the regular classroom, a lack of understanding regarding gifted in general across the district, a lack of individualized instruction or matching programming to the child’s needs, and a lack of communication regarding gifted options. For example, one parent said that gifted students “spend too much time doing stuff they already know – even when they are pulled out in VISIONS”. Another continued, “VISIONS activities are fun…but not what I would say were challenging.”

Continuity across schools also became an issue as parents began discussing the varied options available as dependent upon the school building the child attended. All parents also mentioned the punishment factor as a major issue. They perceived that the VISIONS program is not reputable among regular classroom teachers and because of this the regular classroom teachers end up punishing the gifted child with more homework he/she already knows or being required to stay in at recess to make up work the child already understood. Another parent said “my child feels punished by having to go in for recess to make up what’s missed during VISIONS.” Parents also shared concerns that scheduling was problematic as students may be pulled out of the classroom during scheduled subject times for which they were not identified, causing additional conflict. “The program is ‘one size fits all’. The time missed from class is not always in the child’s identified area.”

Perceived strengths included the Model United Nations program, caring teachers, and the middle school option for services that doesn’t require students to miss core classes. One parent felt that the middle school opportunities in VISIONS were more rigorous and of the caliber of gifted, when compared to the elementary school setting.

Assessment and measures available were perceived as negligible. Parents were unsure of their child’s progress related to giftedness and felt the current rubric for reporting student progress in the gifted program consisted of a lack of usable information to determine progress. Many parents wanted to have a clearer understanding of the goals and curriculum of the program K-12, as well as less repetition among services each year. They also felt that if their child didn’t participate in lengthy after-school activities such as DI or OMUN the services were not as strong.
**Teacher of Gifted Focus Group**

The teacher of gifted focus group consisted of four persons: two elementary teachers of gifted, one who is located full time in a larger elementary school and one who is itinerate, traveling between two smaller schools. The third teacher is new this year and works at the junior high school. The coordinator of gifted services also participated in the group. Relevant responses are listed in Table G. This focus group lasted 35 minutes due to scheduling constraints among the various school buildings.

With few exceptions, the teachers of gifted reiterated the issues of the other focus groups. Major services not listed by other focus groups included subject acceleration, in-class grouping, career counseling, and Summer Honor Institutes. However, excluding career counseling, these services are arranged by the coordinator of gifted for select grade levels, but direct services from the gifted staff are not provided. The Summer Honor Institutes are statewide classes students may apply to for a week or more during the summer. Services provided by the teachers of gifted seemed to center on grouping, higher level questioning, and independent projects. One teacher mentioned an accelerated math course that is occurring in one elementary building.

Teachers of gifted perceived the strengths of the program as a supportive administrative staff and a full-time coordinator dedicated to Cambridge City Schools. They also mentioned how they appreciated and recognized that the school district hired more teachers for gifted than funded by the state of Ohio. Teachers of gifted also perceived one of the major strengths as being socialization for gifted students through the varied program offerings.

The perceived barriers were similar to those of other focus groups and were focused on the regular classroom teacher’s understanding of gifted students, too much make-up work when students are in pull-out, under-performance of identified gifted students, and the hardship of gifted staff having to travel between two buildings. The teachers of gifted also worried about “suspicions of elitism” among the district faculty, which make it difficult to provide appropriate services or break barriers needed to adequately serve gifted students.

Finally, questions five and six were combined due to time restraints. Like other focus groups, the teachers of gifted listed anecdotal measures as program effectiveness including parent feedback, number of complaints or lack thereof, and student comments. Overall, the emphasis of the teacher of gifted focus group included issues of articulation and a lack of understanding of gifted issues among staff members. In addition, many specific services for which they implemented were explained in detail.

**Findings:**

The evaluation team reviewed and synthesized all data collected across the sources cited in this case study and provides the following key findings for consideration. Each finding is followed by a data source code. Findings were listed if at least three data sources listed the concept of the finding.
### Key Findings

<table>
<thead>
<tr>
<th>Findings</th>
<th>Focus Group</th>
<th>Document Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lack of communication exists between gifted personnel and all stakeholders.</td>
<td>T, A, P</td>
<td></td>
</tr>
<tr>
<td>Model United Nations is the most common source of service listed and remembered by stakeholders.</td>
<td>T, TG, A, P</td>
<td>DA</td>
</tr>
<tr>
<td>There is a lack of focused, rigorous curriculum tied to student identification, needs, and content standards.</td>
<td>T, A, P</td>
<td>DA</td>
</tr>
<tr>
<td>There is a lack of a systemic program structure such as program goals, outcome measures on student progress, scope and sequence, curriculum, performance standards, service models, and professional development options for serving gifted students.</td>
<td>T, A, P</td>
<td>DA</td>
</tr>
<tr>
<td>Most stakeholders perceive the additional teacher of gifted who provides services within the building as positive. However, more time in the building for student services is needed. There is a lack of gifted staff personnel and contact time to adequately serve gifted student needs.</td>
<td>T, A, P, TG</td>
<td></td>
</tr>
</tbody>
</table>

### Recommendations:

The following issues, based on the findings, may be considered and developed into action plans for districts.

- There is a need for greater communication among gifted staff with other groups.
- There is a lack of understanding and direction of program direction, goals, alignment, and gifted in general among the teachers, parents, and administrators.
- A systemic Professional development plan is needed.
- Program direction, philosophy, and goals to guide continuum of services (scope and sequence) need to be addressed.
- There needs to be continuity of services within the school (who are they serving and how?).
- A program is needed to match id.
- Data regarding service outcome measures is unavailable.
- Rigor of services and curriculum provided needs improvement.
- Examine grouping options for service planning.
- Extra-curricular activities should work as a service (non-systemic).

### Conclusion

The findings and recommendations provide a template for Cambridge City’s continued progress regarding a continuum of services provided for gifted students. The school district is pleased with the number of staff locally funded to serve gifted students. However, in order to address the aforementioned issues, staffing must continue to increase commensurate with student needs and the implementation of recommendations based on the findings.
### Table C: Student Focus Group

<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
</tr>
</thead>
</table>
| **What are the different ways in which you have been served in this district?** | • Ohio Model United Nations (OMUN), Destination Imagination (DI), Career Mentorships, Math Contests, 1 day pull-out in the elementary, & NASA Learning Center  
• “At OMUN you get to talk with educated people.”  
• “Being with other gifted kids is important, like in elementary school when we had Visions Day.”  
• “We felt special when we were pulled out of the regular classroom. The teachers applied our special skills to content.”  |
| **How are your needs being met in the classroom?** | • “When you’re like challenged – when you actually have to study.”  
• “When you have questions the teachers are willing to answer.”  
• When you have new things to learn like “stuff you’ve never done before”.  |
| **What are the strengths of gifted services?** | • “I like how you can get ahead in college, like with AP classes. Some juniors came from 8th grade with geometry so now they’re taking harder math.”  
• “You get to communicate more with the teachers in advanced classes and you’re treated more maturely.”  
• “You get opportunities that others don’t have like Mock Trial, Math League, Wordmasters, Martin Essex School from the state, and other things like that.”  
• “Written educational plans help you know what to take and how to plan your future.”  
• “Being from Cambridge school system we don’t have much but the teachers push us to do more.”  |
| **What are the barriers or limitations that prevent the provision of services?** | • “Time—it’s really hard to take all the classes you want with block scheduling.”  
• “In elementary school the regular classroom teachers weren’t that understanding when you left for pull-out. The thought it wasn’t important.”  |
| **How do you know the program is effective?** | • “We get feedback from people and we win contests. Many of us were elected as officers or outstanding delegates in OMUN.”  
• “Many people continue to stay in Visions throughout high school.”  
• “Colleges look at AP classes and we’re taking more and getting into higher schools like OSU and Case Western.”  |
| **How do you know you are learning?** | • “Grades”  
• “There’s a difference between what you already know and what you really learn. I’m learning if I’m really frustrated…”  
• “…if I have to study”  
• “…if I enjoy the class and it is exciting.”  |
<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the different ways in which gifted students are served in your district or your building?</td>
<td>• Most listed OMUN at the middle school, pull-out in elementary and some at the middle school with enrichment on a limited basis, Advanced Placement Courses at the high school, Destination Imagination, and high school mentorships.</td>
</tr>
</tbody>
</table>
| How are gifted students’ needs being met in the regular classroom?                                                                         | • Many administrators listed IMS, Instructional Management System, a storehouse of lesson plans from the Ohio Department of Education. Others listed cooperative learning, extension activities, and higher level questions.  
• “This is a building level topic/decision and I can’t accurately comment on it. I know the gifted staff works with the regular education staff to put this in place. However, I’m not sure what has occurred.”  
• “The services listed are really for all kids but also meet the needs of gifted.”                                                                 |
| What are the strengths of gifted services?                                                                                               | • “Staffing (in comparison to similar sized school districts)”  
• “More service than before due to teachers of gifted being part of the elementary buildings...teachers now feel that Visions teacher is part of the staff”  
• “See kids more regularly”  
• “Gifted program getting better every year”  
• Offering of special programs and AP courses (e.g., OMUN, mentorships Mock Trial)                                                                 |
| What are the barriers or limitations that prevent the provision of services?                                                             | • “Staff (Visions) do not seem to fully understand the intent”  
• “Students are dropping out”  
• “Program is only known as fun”  
• “Parents don’t understand the program”  
• “No set vision for the program”  
• “Communication with teachers and parents”  
• “Not enough teachers to serve the students identified”  
• “Some regular education staff have been reticent to differentiate and/or consult with the gifted education staff – especially when a student identified as gifted is having academic and/or behavioral difficulties.”  
• “We need more PD on differentiation”                                                                                                  |
| How do you know the gifted program is effective?                                                                                         | • Parent phone calls and comments  
• Students stay in the program  
• Success of students participating in specialized events  
• “We do not know if the services are effective”  
• Assessment results (Number of accelerated, etc. on standardized tests)  
• Grades                                                                                                                                  |
Table E: Regular Classroom Teacher Focus Group

<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
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</thead>
</table>
| What are the different ways in which gifted students are served in your district or your building? | • Elementary: *Small group pull-out for content with the teacher of gifted grades 2-5 for one hour/week; 45 minutes of math in place of regular math, Destination Imagination, math on the computer, science fair*  
• Middle School: *Visions class and OMUN*  
• High School: *OMUN, Mock Trial, H.O.B.Y Leadership, AP courses, chess club, field trips, mentoring, and PSEO* |
| How are gifted students’ needs being met in the regular classroom? | • “*Harcourt has incorporated above level reading assignments, language, and some spelling.*”  
• “*I don’t do anything different to challenge them academically but do use them as study buddies or peer partners to help other students.*”  
• “*I’m not sure of what type of things I could or should be doing to challenge the gifted students.*”  
• “*I have extremely high expectations for all my students.*” |
| What are the strengths of gifted services? | • “*It’s nice to have a full-time gifted teacher in the elementary building.*”  
• Math league “*pushes kids*”.  
• “*Students in OMUN enjoy it.*” |
| What are the barriers or limitations that prevent the provision of services? | • “*Let teachers know what is going on with the children when they are out of class.*” “*We need more info on what the curriculum is.*”  
• “*Classroom teachers are not aware of what is done in the Visions classroom.*”  
• “*Teachers are not knowledgeable about how students are identified.*”  
• “*Does the curriculum match ours? Are the Vision teachers following the standards that we are required to teach?*”  
• “*Gifted students are lumped together in one class – no matter what area of giftedness they are in. (at MS)*”  
• “*Gifted students who fail classes are still participating with Visions.*” |
<table>
<thead>
<tr>
<th>Table F: Parent Focus Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question</strong></td>
</tr>
</tbody>
</table>
| What are the different ways in which your child has been served in the district? | • Most parents listed pull-out in elementary, subject acceleration as a special case, middle school scheduled time, and Model United Nations.  
• “Now that she is in middle school, she has a class built into her schedule, and she misses no regular instruction time. This is a much better option!” |
| How are your child’s needs being met in the regular classroom? | • “There doesn’t seem to be enough encouragement from teachers for my child to forge ahead and learn more, to realize his potential...In areas where he excels or has a good knowledge base, he is expected to sit and listen while others in his class are taught the concepts or subject matter.”  
• “My child is often bored by the homework or tests and isn’t challenged most of the time. As a result, my child doesn’t follow instructions or gets in trouble.” |
| What are the strengths of gifted services? | • “This is the first year my child was actually in engaged in the activities which encouraged higher level skills.” (referring to MS)  
• “My child has seemed to benefit most from her participation in the Ohio Model United Nations activities. She enjoys being part of a bigger picture!”  
• “Teachers genuinely care about kids and want kids to do well.” |
| What are the barriers or limitations that prevent the provision of services? | • “I don’t think my child spends enough time in Visions activities.”  
• “Spend too much time doing stuff they already know – even when they are pulled out in Visions.”  
• “There’s too much variation between what is offered in different schools in our district.”  
• “My child feels punished by having to go in for recess to make up what’s missed [during Visions].” “Regular teachers don’t have a positive view of Visions.” “Need more professional development for gifted”  
• Visions activities are fun...“but not what I would say were challenging.”  
• “LACK OF COMMUNICATION!” [between Visions personnel and home, regular classroom, etc.] (e.g., What are the goals of the program, what’s the curriculum, what’s the scope and sequence so there are fewer repetitions each year, unfulfilled promises regarding services and options at the beginning of the year for Visions...)  
• “Too much time doing extra-curricular activities as program”  
• The program is ‘one size fits all’. The time missed from class is not always in the child’s identified area. |
| How do you know the gifted program is effective? | • “The rubric and report for Visions is too generic. I have no idea what my child does.”  
• “Not sure—she’s been involved since 3rd grade...” |
<p>| How do you assess your child’s learning? | • “Through standardized testing results, report card information, and just talking with our child and her teachers” |</p>
<table>
<thead>
<tr>
<th>Questions</th>
<th>Illustrative Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the different ways in which gifted students are served in your district or your building?</td>
<td>The teachers listed the following: Pull-out, honors classes, DI, competitions, drama, subject acceleration, advanced classes, socials, OMUN, Ohio energy bookmarks, spelling bee, in-class grouping, grade skipping, post secondary, field trips, career counseling, Summer Honors Institutes, Martin Essex School for the Gifted, self contained math (1 elementary), high school support group, and Written Educational Plans.</td>
</tr>
</tbody>
</table>
| How are gifted students’ needs being met? | “Group students by ability”  
“Small group reading levels”  
“Higher level questions”  
“Student-led, student-driven activities”  
“Product/process-based activities”  
“Pen pals with elementary students”  
“Relationship with content teachers to share ideas and materials”  
“Individual projects” |
| What are the strengths of gifted services? | “Gifted staff in the district and administrative support”  
“Socialization [for gifted students]”  
“Service is delivered in various degrees 2-12” |
| What are the barriers or limitations that prevent the provision of services? | “Staff not understanding gifted characteristics/services”  
“Suspicions of elitism”  
“One teacher serving two buildings”  
“Identified Visions students involved do not perform at an average level”  
“Students have to make up homework” |
| How do you know the gifted program is effective? | “Teachers are not complaining to the principal”  
“Students desire to engage in more classes even though they have added homework” |
| How do you assess gifted student learning? | “Feedback from parents, students, and teachers” |
On March 23, 2005 a member of the William and Mary lead research team spent the day in Maumee City School District to examine the continuum of services provided within the district. The case study activities included:

- Administrator focus group
- Elementary teacher focus group
- Secondary teacher focus group (MS & HS)
- Parent focus group
- Student focus group (HS students)
- Individual interviews (2): Superintendent and District Gifted Coordinator
- Collection of relevant documents related to the continuum of services to be analyzed

Overview of Service Model(s) Employed in District

Maumee City Schools have three distinct service models; one for elementary, one for middle school, and the other for high school. At the elementary level, identified gifted students attend Gifted and Talented Education Classes (GATE). GATE occurs in grades 3-5 and is a resource room/pull-out model, where students attend the GATE classroom in their home school for 4-5 hours each day, one day a week. The focus of learning in the GATE room is enrichment; many process skills such as creative and critical thinking, problem based learning, and independent and small group investigation are emphasized. At the middle school level, identified gifted students are in the BRIDGE program. Students are assigned to special classes for 1-6 periods daily for academic subjects in which they have been identified. In grade six, these are subject-contained gifted classes in reading/language arts and/or mathematics. In grades seven and eight, science and social studies are added. At the high school level, students have the option of Honors classes (grades 9-12) in all subject areas and certain AP courses (grades 11-12) as well as post-secondary enrollment option. Across the K-12 spectrum, competitions and contest opportunities are provided and strongly encouraged. Other forms of service such as acceleration or independent study exist, but these are not formalized and occur on a case by case basis.

Document Analysis:

The following relevant documents were submitted for review:

- Maumee City Schools Case Study of Gifted Education (2003) Notebook
- Written Education Plans (WEPs)
- Extra Curricular Offerings
- Profile of proficiency and state achievement results for district
- Professional Development agendas from trainings
- Listing of teachers with gifted validation/license
- Sample curriculum units employed with gifted learners

Case Study Notebook

The case study notebook serves as a comprehensive overview of Maumee’s gifted program. It is over 100 pages in length and contains eight sections. The sections are as follows: introduction, historical perspective, professional staff, gifted identification, continuum of services, areas of concern, gifted in the 21st century, and conclusion. It was compiled by the
district coordinator in 2003 for the Ohio Department of Education and Battelle Memorial Institute as part of a research grant focused on self-study. It documents the program since its inception in 1980 (program became official in 1984 when the state passed the Rule for Gifted Children) and includes descriptive narratives within each section complete with student and teacher quotes, as appropriate to bolster the relative section. It is not a “how-to” manual but rather a chronology of the district’s program and its relative components. Within the continuum of service section, research is embedded to support the relative service delivery options that are employed by the district. The Appendix section includes supporting documents, such as brochures, policies, or parent questionnaires. It is a wonderful documentation of the program and should serve as a model for a district’s self-study.

**Written Education Plan**

Several examples of the written education plan were submitted for review. The form is relatively short and is straightforward and systematized. Each submitted WEP is for an individual student. The first two pages identify the area(s) of giftedness (e.g., cognitive, specific academic, creative thinking, or visual/performing arts), the district program that the student would be in (GATE, BRIDGE, etc.), a checklist of instructional strategies (cooperative learning with like peers, interdisciplinary studies, curriculum compacting, etc.), an area for individual student interventions, individual student extensions, student feedback, and appropriate signatures.

No record of matching the service to the child could be found. For example, several of the WEPs that were submitted had cognitive and/or specific academic areas checked for identification and yet in the service area of the form, checks were made in everything from resource room to acceleration to self-contained honors class. The strength of the WEP appeared to be in the individual student intervention and/or extension sections, wherein a teacher or parent could individualize comments, goals, and methods around a student’s needs.

**Extra Curricular Offerings**

The extra curriculum offerings provide a glimpse of summer programs for gifted students as well as enrichment offerings during the academic year. Included were summer brochures, a description of Maumee High School’s mentorship program, a flyer with field trip options, and a flyer describing a junior scholars program where small groups of gifted students meet with doctors and other health professionals during lunch for 1 ½ hours one day a year. Most enclosures were summer related programs and all reflected enrichment opportunities that are provided for gifted students but open to all students.

**Proficiency and state achievement test results**

The 2003-2004 Maumee City School District report card was submitted for review. It is a standardized form from the state department proclaiming the district’s designation (excellent, effective, continuous improvement, academic watch, or academic emergency) and the percentages of students at or above proficiency levels in various content areas at specific grade levels (3rd, 4th, 6th, and 9th). It provides a comparison of how the district scored relative to similar districts and the state requirement. Maumee’s designation in 2003-2004 was “effective” and they received a performance index score of 97.1 out of a possible 120 points. Subgroups are disaggregated by ethnicity, economically disadvantaged, limited English proficiency, and
students with disabilities. There is not a designation for gifted, so there is no way to discern how gifted students are doing. The report card does report that 28.9% of all students tested scored “advanced,” yet there is not way to determine of that percentage, which students are identified as gifted. Also submitted was an example of a GATE progress report. The report has five categories: task commitment, habits of mind, academic abilities, student productivity, and demonstrates research skills. Teachers are to indicate a 1, 2, or 3 for each category. 1 is almost always exceed expectations, 2 is does what is expected, and 3 is seldom does what is expected.

**Professional Development agendas from trainings**

Maumee has a long history of providing professional development opportunities within the district as well as allowing teachers to attend state gifted conferences over the years. The district coordinator has presented at the state conference and serves on a consortium with other coordinators. Additionally, several teachers have presented at the national gifted conference. Included for review were various flyers announcing national and international speakers such as Dr. Joyce VanTassel-Baska, Dr. Karen Rogers, and Dr. Jim Delisle. These renowned experts presented at the Ohio Association for Gifted Children conference or were brought in locally for the district.

**Teachers with gifted validation and funding**

The state of Ohio funds 2.4 personnel units for the district to serve its gifted population, yet the district has 7.16 teacher units serving gifted; the rest of the teachers are locally funded. Sixteen teachers have gifted validations on their teaching certification and within that group, many have a Masters degree in education with majors or emphases in gifted. This is a large number considering the size of the district.

**Curriculum Units**

Sample curriculum units were submitted for review. They included one elementary problem-based learning unit, one middle school language arts unit focused on the development of higher order thinking skills centered around the novel *The Hobbit*, and several high school mini-units employed in English, Social Studies and Science classrooms. The English units centered around novel studies such as *Huckleberry Finn* or *My Antonia* and all employed a central guiding question for students to reflect upon as they read the novel and completed the various activities. The high school social studies unit focused on the concept of diplomacy and the high school science unit opened with a scientific theory through which the students would understand as they conducted the various applications. None of the units followed a similar lesson plan format. The curriculum units reflected the individuality of each instructor. Some had state objectives listed, others did not. Many of the units employed Bloom’s taxonomy as an organizer for questions. Most of the submitted units were interdisciplinary in that the activities employed mapping, community involvement (PBL), student reflection, and many process skills, such as speaking or writing. Most of the assessments employed in the units were authentic and performance-based either with final presentations or products.

**Focus Groups:**

Student, teachers, administrator and parent focus group sessions were held, each lasting approximately one hour. The focus groups results will be discussed individually. In addition, two interviews were conducted; one with the district Superintendent and the other with the
district coordinator of gifted. A total of 33 persons participated across all four focus group sessions. The relevant participant numbers for each focus group are listed below:

<table>
<thead>
<tr>
<th></th>
<th>Student</th>
<th>Parent</th>
<th>Teacher (elem)</th>
<th>Teacher (sec.)</th>
<th>Administrator</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>5</td>
<td>5</td>
<td>7</td>
<td>10</td>
<td>6</td>
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</table>

**Student Focus Group**

Five high school students arrived at the school board office to participate in the focus group. The students who participated have had experience in the varied types of services provided since elementary school in Maumee. (See Table H for illustrative comments for each question.)

The students listed the three main service provisions: GATE, BRIDGE, and Honors and AP. They perceived contests and competitions as one way of being served and cited those as being memorable. Also mentioned was the fact that competitions allowed them to interact with students from other schools, to see “how we stack up.” They also alluded to the importance of being placed with other gifted peers in pull-out, and throughout middle and high school. They mentioned that other than the designated gifted teachers, the regular classroom teachers weren’t that responsive to their needs.

Regarding how their needs are being met in the classroom, most of the students said that it didn’t happen often in the regular classroom (elementary level), but frequently happened in the gifted program because in those classrooms they had to study or work at something and they usually enjoyed the class because it was something new to them. Several students cited that they know their needs are being met when they “feel challenged.”

The students perceived the strengths of the program as getting more individual attention, being with other gifted students, and going more in-depth in course content. They mentioned field trips and the fact that they were encouraged to participate in state and national competitions as a way to showcase their talents as plusses. Several mentioned the teachers in the gifted program as being passionate and enjoying gifted students.

Most of the barriers centered on a lack of teacher understanding about gifted and course scheduling issues at the high school. Specifically, several students mentioned that the high school has recently gone to a trimester schedule and at this point, the students felt that the new schedule hindered rather than helped them, because not as many courses can be offered. Furthermore, many schedules for advanced classes or other opportunities at the high school overlap and it was difficult to get the classes they need. Students perceived that teachers felt crunched to cover all the material. Lastly, students mentioned that while being with other gifted students can be a strength, it also represents a barrier.

Students judged program effectiveness through their AP scores, college admissions, and placement of teams at state and national competitions. They judged their own learning as application to real life and comments made to them by others. Overall, the students were most pleased with their program and took pride in their abilities as spawned from the gifted program.
Administrator Focus Group

The administrator focus group consisted of a variety of central office and school personnel. Six persons attended the focus group including two elementary school principals, one middle school principal, one high school principal, one director of technology, and the director of curriculum and instruction; 2 males and 4 females. See Table I for illustrative comments for each question.

The administrative responses in general spoke to the larger K-12 program at each relevant grade level cluster (elementary, middle, and high). Site principals mentioned specific units of study or field trips that the students took. Overall administrators were pleased with the program and program staff. Some administrators mentioned concerns over teachers not being “pro-gifted” and how that attitude impacts overall service delivery. Accolades were given regarding the opportunities for competitions and contests for the gifted students.

Administrators perceived that students are served through a variety of in-class strategies such as problem solving, research, and independent study opportunities. At the high school level, the courses are more rigorous and weighted (5.0 scale) to reflect the additional work that students are expected to do. Overall, administrators mentioned that the gifted teachers have higher expectations for student learning, and provide challenging curricula.

Regarding the strengths of services, many administrators perceived the strengths to be the number of staff members dedicated to gifted services when compared to other districts and the training level of those involved in service delivery. Administrators at the elementary level were also pleased with the change to services being provided within the school rather than having students transported to other buildings. Another mentioned strength was the identification process and the overall flexibility within the district to respond to individual needs. Finally, administrators mentioned community support and involvement as a strength.

Administrators listed finances as a major issue as the staff members who are serving gifted are mostly locally funded and the student-teacher of gifted ratios are high. Many of the program weaknesses surrounded the major themes of scheduling and professional development. For example, at the elementary level, more coordination is needed between GATE and other specialties. At the high school, scheduling selective courses precludes other options for gifted students. Professional development was cited as a need for regular education teachers in terms of differentiation and attitudes about gifted students.

Administrators judge program effectiveness through measures such as satisfaction surveys, drop out rates from gifted program, and AP enrollment figures. Overall, administrators feel the program is effective because the number of students served remains constant over time, and they receive very few parent concerns. They mentioned that scores on the state tests, AP exams, and other standardized measures were ways to determine students’ growth. Lastly, they shared that teachers are ultimately responsible for monitoring student progress and growth.
**Parent Focus Group**

Five parents of gifted students attended the focus group. The five parents, however, represented a total of 12 students ranging from elementary to high school. (See Table J for illustrative comments for each question.)

Overall, parents are very satisfied with the current program at the relevant grade levels. The themes of passionate teachers, challenging experiences, and being with other gifted students were expressed K-12. Furthermore, several parents perceive that the district office is supportive and responsive to their needs. Communication was not perceived as a barrier and one parent commented that the reason they live in that district is because of the strength of the gifted program. Several commented on the extracurricular options for their children and the connection to the larger community through projects and/or community service.

Parents’ perceptions about program and student effectiveness mirrored other stakeholder groups’ perceptions with responses centered on state testing, AP/SAT scores, college admissions and their own children’s comments. A few parents who had children that had graduated from the district shared that their children were well-prepared for college and ultimately the work world.

**Elementary Educators**

Seven educators were present at the focus group with the following representation: 3 classroom teachers, 2 GATE teachers, 1 school psychologist, and 1 school guidance counselor. (See Table K for illustrative comments for each question.)

Educators discussed the overall program design of the GATE program. They shared how the GATE teachers collaborate with others and the flexibility of the program meets individual needs. They mentioned after-school activities that are open to anyone but consist primarily of the gifted students. Some concerns were expressed that no formal program exists at the K-2 level.

Themes that emerged with regard to differentiating curriculum and instruction were providing students with in-depth research, tiered assignments, projects based on student choice, and thematic approaches to integrating the curriculum. Teachers mentioned competitions such as Quiz Bowl or Mathcounts as extensions for students. Some teachers pre-assess and then allow alternative assignments based on student interest. Lastly, allowing students to self-select reading materials was another way that teachers differentiate.

Perceived strengths were the GATE teachers themselves and their ability to challenge while still nurturing the socio-emotional needs of gifted students. Other program strengths were that students stayed in their home school and that all students who are identified are served. Another strength was that the school psychologist works collaboratively with the elementary school to administer tests. Lastly, curricular approaches, such as problem-based learning or the use of pre-assessment, were shared as program strengths.

Barriers included lack of common planning time between the two GATE teachers and between GATE and regular classroom teachers, no formal K-2 services, and allocation of resources. There was some frustration shared by GATE teachers that sometimes when the students are supposed to go to the resource room for GATE, that time gets used for students to
finish regular classroom assignments. Finally, there are limited opportunities for the GATE students across both schools to work together.

The elementary educator focus group felt that the program was effective because of the students’ enthusiasm and willingness to participate in GATE. The regular classroom teachers felt that the students’ skills from GATE transferred to their classroom through student’s vocabulary, problem-solving abilities, and willingness to share what occurred during GATE with their classmates. Several expressed high parent satisfaction and low student drop-out rate from GATE as determinants of effectiveness.

With regard to student growth, teachers mentioned individual approaches such as rubrics or portfolios. Others mentioned certain programs, such as accelerated math and monitoring student performance in a content area. The GATE teachers allow students to set their own goals and then self-assess. Lastly, educators mentioned state achievement scores as an objective measure for summative student growth.

**Secondary Educator Focus Group**

Ten educators were present for the secondary focus group with the following representation: 4 middle school teachers, 1 middle school guidance counselor, 4 high school teachers and 1 gifted intervention specialist that also has teaching responsibilities. (See Table L for illustrative comments for each question.)

Responses to services provided included the name of the middle school program, BRIDGE, and reference to the honors and AP courses at the high school. More specifically, responses included the nature of the curriculum being utilized or the pace in which instruction goes forward. References were made to the high school gifted intervention specialist and how valued that role is at the high school.

The middle school program, in grades 6th-8th, groups identified gifted students in a language arts/ mathematics block and then in 7th-8th grade, a science/social studies block is added for identified gifted students. Both groups of secondary teachers spoke to the variety of competitions offered and the placement of Maumee’s teams when compared to other districts and/or states.

The theme of differentiation through pacing, complexity, depth, and acceleration emerged in response to how students’ needs are met at the classroom level. The high school teachers mentioned the AP curriculum and adhering to it, but commented on how they vary labs or experiences for the students. The middle school teachers spoke to an interdisciplinary approach to student learning with the subject matter content being accelerated.

Strengths included references to all stakeholder groups (i.e. students, parents, teachers, and administrators) as being supportive, committed, and strong. There was also a comment or two referring to the longevity of the program and the longevity of the teaching force. Perceptions were that the program was strong as a result of both factors taken in combination. Lastly, the model of grouping gifted students in academic areas of strength was perceived by all secondary teachers as a program strength.
A lack of planning time and therefore of opportunities to communicate were cited as the biggest barriers for teachers. The lack of scheduling flexibility and “having a full-plate” were perceived as the biggest barriers for students.

Teachers commented on how well students place in competitions and scores on standardized measures as two ways of measuring program effectiveness. They also mentioned more informal measures such as parent and student satisfaction. In terms of student assessment and documented growth, scores were mentioned along with comments about the quality of student products produced as part of a unit of study. Some reference was made to the nature of the high quality of discussion typically held during instruction.

**Interview with Superintendent**

Dr. Elissa Brown interviewed Dr. Greg Smith, the superintendent of Maumee City Schools. The interview lasted approximately 30 minutes to address the six questions of interest. Dr. Smith expressed that he was reasonably satisfied with the gifted program in his school district; however, he pointed out from his own experience as a parent with children in the program and his experiences in that district for the last ten years, there was more work to do. While he felt that it was positive that gifted students do more work in the gifted program, he expressed some concerns over the lack of recognition of that extra work. “Other than intrinsic reward, it’s hard for them because they get more work.” When asked about the relative strengths and limitations of the program, Dr. Smith commented on the outstanding teaching staff. “We have phenomenal teachers who are passionate about gifted students. As a parent, I get to know them differently and see what my kids bring home.” On the flip side, he felt that there were still teachers in the district who philosophically were not advocates for gifted students. “We still have teachers who do not differentiate because they do not think these kids need anything more.” He felt that the gifted program identified the right students and then provided the “best education we can give them.”

In reflecting upon program and student effectiveness, Dr. Smith shared that annually a senior banquet is held to recognize the accomplishments of students. He receives informal positive feedback from parents rather than angry phone calls. Another measure he cited was students who return from college and report that they felt well prepared for higher education. “They tell me that their first semester or year was easy.” He did think that maybe a more formal process of collecting data should be in place to show program effectiveness. Overall, he shared, “I’ve been in five different districts, and this one is the best that I’ve seen for a quality continuum of services for gifted students.”

**Interview with District Coordinator**

Dr. Elissa Brown interviewed Ms. Ellie Slotterbeck, the district coordinator of gifted services for Maumee City Schools. The interview lasted approximately 30 minutes to address the six questions of interest. Ms. Slotterbeck is very proud of the service delivery options for gifted students in Maumee City. “We have so many strong links; the teachers have longevity, ownership of the program, and for the most part certification. We have a supportive Superintendent. The parents are satisfied and involved, and of course, the students are great.” The strengths of the program centered on the teaching staff and administrative support.
The limitations were perceived to be at the elementary level. She was not sure that differentiation was occurring for these students, other than the services provided one day a week through the GATE program. “It’s up to individual teachers and some do a better job than others. It’s catch as catch can.” Limitations cited were common planning time for teachers at all grade level clusters, K-5, 6-8, and 9-12, as well as limited planning time between her and the teachers. She also expressed some concern over a few teacher and site administrator attitudes. She expressed concern about continued state funding and the funding toll on the local districts.

In terms of program effectiveness, Ms. Slotterbeck spoke to measures such as scores on the Ohio proficiency tests, satisfaction surveys, and a study she conducted with high school graduates as evidence of effective continuum of services. She shared that parents have commented to her that other school districts do not provide the services that Maumee does. In terms of individual student’s performance, she shared, “When they come up to me and say, ‘Wow-do you know what we learned in Physics?’ or ‘Why don’t we have GATE everyday?’, I know the program is working.”

**Findings**

The evaluation team reviewed and synthesized all data sources cited in this case study and provides the following key findings for consideration. Each finding is coded by the appropriate data source. Findings were listed if a minimum of three data sources listed the topic of the finding. Key for data sources are as follows: Elementary Teachers (ET), Secondary Teachers (ST), Administrators (A), Parents (P), Students (S), Interviews (I), and Document analysis (DA).

<table>
<thead>
<tr>
<th>Key Finding</th>
<th>Focus Group</th>
<th>Document Analysis</th>
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<tbody>
<tr>
<td>Parents are supportive of gifted program.</td>
<td>ET, ST, A, P, I</td>
<td></td>
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<tr>
<td>There is longevity of the service delivery model.</td>
<td>ET, ST, A, P, S, I</td>
<td>DA</td>
</tr>
<tr>
<td>(enrichment-based at the elementary level, 3-5)</td>
<td></td>
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<tr>
<td>(academic-based at the secondary level, 6-12)</td>
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<tr>
<td>There is a lack of systematic evidence collected and analyzed to support program effectiveness.</td>
<td>ET, ST, A, P, S</td>
<td>DA</td>
</tr>
<tr>
<td>Gifted students are with other gifted students the majority of their K-12 experience.</td>
<td>ET, ST, A</td>
<td></td>
</tr>
<tr>
<td>Some teachers and administrators are resistant to gifted students and/or the gifted program.</td>
<td>ET, P, S, I, A</td>
<td></td>
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<tr>
<td>There is a lack of systemic and integrated K-12 program structure such as program goals, outcome measures for student progress, scope and sequence, curriculum, performance standards, service models, and professional development options for serving gifted students.</td>
<td>S, A, I</td>
<td>DA</td>
</tr>
<tr>
<td>There is a lack of contact time (teacher-to-teacher or student-to-student)</td>
<td>ET, S, ST, I</td>
<td></td>
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<tr>
<td>This district is flexible in serving any gifted student identified.</td>
<td>P, ET, ST</td>
<td>DA</td>
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<tr>
<td>Competitions and other extra-curricular options are perceived</td>
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as strengths of the program, and as a way to evaluate program effectiveness

| ET,ST, P, S, A, I | DA |

**Recommendations**

The following recommendations derived from the key findings may be considered and developed into action plans for the districts.

- While considerable attention is given to the program, there is little alignment among all the components such as curriculum units, program goals, service delivery, extracurricular options, and student and program data.
- Formulate a K-3 component.
- Provide professional development to teachers who have gifted students in their classroom to provide awareness of student characteristics and needs as well as classroom differentiation strategies.
- Formalize a process for gathering and reporting student outcome data and program effectiveness.
- Provide an array of services matched to student’s identified area(s).
- Different service models exist at different grade level clusters; pull-out enrichment, ability grouping in content areas, etc. While an array of services is positive, the array should be coordinated and deliberate, ensuring that student needs are met.
- Monitor teacher effectiveness in gifted classrooms.
- Restructure schedule (if appropriate) to allow teacher planning team.
- Consider a standard format/outline for curriculum units that speak to a scope and sequence, authentic assessments, substantive content, higher order processes and products, and conceptual understanding.

**Conclusion**

Maumee City Schools have much to be proud of with regard to their gifted services. The program is articulated in written and oral formats, has parent, community, administrative, and teacher support, and is perceived as flexible. Aspects of the program, however, need to be improved. For example, the array of service options should be coherent rather than separate distinct models. Professional development needs to continue but become targeted based on needs assessment. The multiple data sources, findings, commendations and recommendations provide a template for Maumee’s continued program improvement.
<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
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| What are the different ways in which you have been served in this district? | • GATE (elementary), BRIDGE (middle), Honors and AP courses (high school). Teachers encourage competitions. Field trips and opportunities for independent study.  
• “Maumee performs well in competitions.”  
• “The Honors program allows for accelerated learning and we go more in-depth into topics, yet there is also room for creativity.”  
• “In GATE, I was given the chance to challenge myself more than in the regular classroom.” |
| How are your needs being met in the classroom? | • “I feel challenged by my classes, not just doing busy work.”  
• “The competitions allow my to share what I’ve learned.”  
• “We have a lot of in-depth discussions in class and we’re encouraged to move at a faster rate.”  
• “Most of my classes require critical analysis of topics.” |
| What are the strengths of gifted services? | • “Individual attention.”  
• “A true strength is when a teacher understands the student’s abilities and does not hinder you, with the quantity of work.”  
• “Teachers are enthusiastic about their subject.” |
| What are the barriers or limitations that prevent the provision of services? | • “Some teachers prefer quantity over quality of work.”  
• “The honors program sometimes loses representation in overall school decisions, which hurts the honors students. An example of this is the new trimester schedule; helps the non-honors students, hurts the honors students.” |
| How do you know the program is effective? | • “Normal classes are boring.”  
• “I have been given many opportunities throughout my years, as a result of the gifted program. If there was not a program, my personal learning would have been hindered.”  
• “Placement of winning on state and national team competitions.”  
• “I am prepared for college.” |
| How do you know you are learning? | • “Comments by teachers and other outside influences.”  
• “My increased comprehension in reading.”  
• “I am able to remember concepts for long periods of time.” |
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<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
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</table>
| What are the different ways in which gifted students are served in your district or your building? | • Most administrators spoke to the larger program K-12 being GATE, BRIDGE, and Honors/AP at the high school level. A few of the site principals mentioned specific units of study or field trips that the student took.  
• “Students explore problems and solve through research and study.” |
| How are gifted students’ needs being met in the regular classroom?      | • “All teachers use the state content standards as their starting base and from that point teachers extend their lessons to challenge and accelerate the learning.”  
• “This is one area that needs more support. The general education teachers have high expectations but there is not a consistent delivery of differentiation in all classrooms.” |
| What are the strengths of gifted services?                              | • “Having a program in the building.”  
• “Maumee is blessed with bright children, involved parents, dedicated staff, and we all capitalize on a variety of learning opportunities for the students.”  
• “There is a volunteer component in GATE.”  
• “We have an established program and a dedicated coordinator.” |
| What are the barriers or limitations that prevent the provision of services? | • “Money.”  
• “Scheduling.”  
• “Barriers include time, money, staffing, professional development, teachers who are not pro-gifted; full plate for teachers; they are unable to add 1 more thing.”  
• “Parent pressure to have students served, requires additional money for individual testing.” |
| How do you know the gifted program is effective?                        | • “Student achievement scores on the Ohio proficiency tests.”  
• “The elementary students continued to be served at the middle school and high school...there is a continuum of services.”  
• “Written Education Plans track student progress.”  
• “The program is evaluated annually by parents, teachers, and students.” |
| How do you assess gifted student learning?                              | • “Graduation levels.”  
• “Teacher/Parent conferences.”  
• “AP scores, trend data and ACT/SAT scores.” |
### Table J: Parent Focus Group

<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
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| What are the different ways in which your child has been served in the district? | • Most parents listed the three large service delivery models (GATE, BRIDGE, Honors/AP) as well as referring to specific activities and extracurricular options that their children have been involved in over the years.  
• “All three of my children have benefited in different ways.”  
• “The program is individualized by area of giftedness.”  
• “Students have more opportunities to participate in competitions outside the classroom.” |
| How are your child’s needs being met in the regular classroom?            | • “Students go beyond the basic lesson; more in-depth. They take field trips and more involved in the learning process.”  
• “The teacher in the GATE program, works with the regular classroom teacher to enhance lessons.”  
• “We have amazing teachers; this is the key. They love their subject area and especially the students and the students can feel their passion.” |
| What are the strengths of gifted services?                               | • “Being with like-ability peers.”  
• “Learning to work hard, because life is not always easy.”  
• “The commitment at the district level; particularly the district coordinator.”  
• “Well qualified teachers who love what they do and care about students.” |
| What are the barriers or limitations that prevent the provision of services? | • “GATE is only 1 day a week.”  
• “Sometimes the word “gifted” seems to mean-to certain teachers-more work.”  
• “The counselor’s role with the students is crucial, especially at the high school. We need more training there.” |
| How do you know the gifted program is effective?                         | • “They (the students) are happy with the challenge.”  
• “I know it’s effective because my children are engaged, interested, challenged; they’re not bored. They talk to me about what they’re learning.” |
| How do you assess your child’s learning?                                 | • “Because he knows more than I ever did at that age.”  
• “My daughter is applying for colleges, and I’m seeing what the AP/Honors courses have allowed her to do.” |
<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
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| What are the different ways in which gifted students are served in your district or your building? | • “Pull-out GATE 3-5, one day a week.”
• “Differentiated instruction and cluster grouping.”
• “Classroom teacher uses higher level materials in own classroom to meet the needs of a few students.” |
| How are gifted students’ needs being met in the regular classroom? | • “Pre-test to determine knowledge level.”
• “I give more challenging activities; in-depth research, or extension of concepts.”
• “Lots of ways; individual spelling lists, alternative assignments, different writing or math assignments.”
• “I ask higher level questions in group guidance sessions.” |
| What are the strengths of gifted services? | • “Content is tailored to interests and area of identification of student.”
• “The program design. The fact that it is housed in each building.”
• “We service all students who are identified. The teachers are passionate and we have resources available.”
• “GATE teachers are knowledgeable and flexible.” |
| What are the barriers or limitations that prevent the provision of services? | • “We do not have a program at the K-2 level and there is a lack of materials for the lower grades for the classroom teacher.”
• “Some students feel the need to do all the work they miss on ‘GATE’ day.”
• “Classroom teachers who won’t make accommodations because we have a GATE program.”
• “Not enough time.” |
| How do you know the gifted program is effective? | • “The number of students at the high school that were in the GATE program.”
• “Students will come to GATE sick; they don’t want to miss it.”
• “Parental satisfaction”
• “I see some carry over effect in my class from the skills they learn in GATE.” |
| How do you assess your gifted students’ learning? | • “GATE students keep a notebook to document growth over time.”
• “I use rubrics for specific assignments.”
• “Students are excited to go to GATE and want to share what they are working on.” |
<table>
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<tr>
<th>Question</th>
<th>Illustrative Responses</th>
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</table>
| What are the different ways in which gifted students are served in your district or your building? | • “At the middle school level, students are cluster grouped by subject area in area of giftedness.”  
• “High school has honors courses, AP courses, and an intervention specialist coordinator dedicated to the high school.”  
• “All classes use accelerated pace and material.”  
• “Gifted students make up the majority of students who take advantage of the various contests and competitions.” |
| How are gifted students’ needs being met in the regular classroom?      | • “I teach them totally different than my regular classes; more depth, complexity, high level reading materials, open-ended, and different levels of questioning.”  
• “I don’t waste time going over repetitive stuff, they already know.”  
• “There is a finite AP curriculum with AP standards.”  
• “I use a different grading scale.”  
• “Acceleration of curriculum and interdisciplinary units.” |
| What are the strengths of gifted services?                              | • “Highly motivated and talented staff.”  
• “Provides for homogeneous grouping and sometimes reduced class size.”  
• “Strong parent and district level support.”  
• “Teachers are certified to work with gifted students.”  
• “We serve all students who qualify and there is due process for admission and removal.” |
| What are the barriers or limitations that prevent a comprehensive provision of services? | • “Because of the change in high school schedule, there is a lack of scheduling flexibility for the students.”  
• “Lack of common planning time.”  
• “While it may be a strength, the fact that these kids are with their same group for most of their schooling is a weakness; it can create an elite attitude at times.”  
• “Student’s are involved in too many things.” |
| How do you know the gifted program is effective?                       | • “They do incredible well at competitions.”  
• “Parent feedback.”  
• “Post graduation surveys indicate a high level of satisfaction.”  
• “The program has been in place a long time.”  
• “Student performance on tests.” |
| How do you assess gifted students’ performance? What criteria are you using to make this judgment? | • “Their AP scores, and scores on ACT/SAT tests.”  
• “Students’ ability to write well and make connections across disciplines.”  
• “I look at the quality of their products.” |
Report on Pickerington Local School District On-Site Visit
Pickerington, OH

On March 23, 2005 a member of the William and Mary research team spent the day in Pickerington Local School District to examine the continuum of services provided within the district. The case study activities included:

- Administrator focus group
- Teacher focus group, including teachers of gifted
- Parent focus group
- Collection of relevant documents related to the continuum of services to be analyzed

District Overview of Services:
Pickerington School District provides in classroom services for all identified students, K-12. Services are limited to in-class only for students in Kindergarten through grade two. Third and fourth grade students may be cluster grouped and served in language arts with some math services as well. Fifth and sixth grade students have a layered opportunity. Specific academic students are clustered for specific services in language arts and some mathematics. Superior cognitive students have the opportunity for a self-contained classroom for all core content areas. They are heterogeneously grouped for special courses only. There is a limit of 50 students who may participate in services regardless of the number who qualify. This is due in part to Ohio rules regarding the number to be served.

The middle school students are grouped together and have opportunities to take advanced mathematics courses for high school credit, foreign language, and science, regardless of their identified area. High school students are able to participate in honors courses, Advanced Placement options, and Post-Secondary Enrollment Options (PSEO). Extra-curricular academic activities are also available for all students.

Document Analysis:
The following relevant documents were submitted for review:

- Written Education Plan
- Summer program and staff development offerings
- Curriculum and policies for gifted learners

Each of the documents is well-written and explanatory, providing a guideline for teachers regarding gifted services and program options.

Written Education Plan:
The written education plan serves as a placement document for students. The process for writing the WEP is straightforward and systematized. The strength of the plan is the parent information and signature request at parent conferences. Two forms are attached to the process guidelines for the WEP: Courses list which seems to be used for middle school and high school and the WEP for elementary students which includes either resource room, self-contained classroom, or cluster group. The course and content modifications are the standardized and teachers are instructed to sign the form. No record of individualization of matching the service to the child could be found in the WEP with the exception of the choice or placed courses the
students could take. However, three options at the elementary level were provided depending on the student identification level: resource room, self-contained, or cluster group.

Summer program and staff development offerings:

The 2003-2005 school years include optional training for regular classroom teachers on differentiation strategies for the regular classroom including differentiated assessment, introduction to differentiation, facts and myths of gifted, questioning, tiered lessons, and learning centers/contracts. In addition the district operates summer school for enrichment and remedial experiences.

Curriculum and policies:

The curriculum and policies for gifted learners includes a maximum of 150 students, regardless of the number of equally identified students. The program for the gifted includes content connected to broad-based themes, multiple disciplines, in-depth learning, independent study, higher level thinking, open-ended tasks, research skill development, and products that challenge existing ideas or create new ones. Two affective outcomes, student self understanding and self-assessment, were also listed.

A course of study was also provided which includes a gifted program model and an emphasis on process skills of higher level and creative thinking, research methods, interpersonal relationships, and oral and written expression. The higher level thinking options were well defined and included objectives, strategies, suggested resources, skills, and possible assessments. Grade level options were not delineated or specifically connected to advanced content standards in the recommended resource lists. Rubrics were included for evaluation of the process skills. However, evidence of the course of study connections to the program offerings as listed by the stakeholders were not connected. In addition, connections between the goals listed in the program information were not completely aligned with the course of study for gifted process skills.

Interview:

The coordinator of gifted services was interviewed regarding the continuum of services provided in the district. She reported multiple options of services available for gifted students including pull-out, cluster grouping, self-contained classrooms, honor courses, Advanced Placement, grade and subject acceleration and post-secondary options being utilized within the district. She reported that there is staff development regarding differentiation for regular classroom teachers on a consistent basis including a Summer Academy. She believes that professional development for regular classroom teachers is important and currently all junior high staff is required to attend training on differentiated instruction for all learners. The district relies heavily on classroom differentiation due to the limited number of students who are able to be served.

Many strengths of the program were listed including a cohesive gifted staff, the commitment of regular classroom teachers to high expectations for all students, the variety of service options available to students, and the VOYAGE self-contained program. In addition, the teacher of gifted resource room options that are available at certain grade levels provide an increased awareness of “who the gifted students really are”.

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There are some barriers to implementing a continuum of services. The major issue includes the resources and financial support to fund a growing district. Over one-third of the school population is identified as gifted and therefore, the gifted program must rely heavily upon the regular classroom teachers for ongoing differentiation. In the past three years the district has grown from 3,500 students to 9,300. This growth gain obviously impacts the program and delivery of services. The reliance on classroom teachers for services provides its own unique issues, including philosophical differences on the part of some educators, the perception of the VOYAGE program as being elitist, and the attitude that gifted is a reward instead of an appropriate academic placement.

Currently, the coordinator employs exit surveys from parents and students to report anecdotal evidence regarding their experiences with the gifted services provided. Data regarding scores on the ACT or SAT are also collected and it is noted that many students are going to “high quality universities”. In addition, the district administers the Stanford Achievement Test and the state proficiency assessment at given grade levels, although the data is not aggregated for gifted learners at this time.

Focus Groups:
 Teacher, administrator, and parent focus groups were held, each lasting approximately one hour. A total of 23 persons participated across three focus groups. The same protocol was used for each group, but worded differently based on the stakeholders being interviewed. The focus group procedures consisted of the facilitator providing an overview of the purpose of the group and the questions to be asked. Each participant was given an index card and asked to respond to a given question. After the participants had time to respond individually, cards were collected by the facilitator and whole group discussion was solicited and reported on chart paper. This procedure was conducted for each of the six questions. The focus groups results will be discussed individually.

Focus Group Participants by Number

<table>
<thead>
<tr>
<th>Parent</th>
<th>Teacher</th>
<th>Administrator</th>
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<tbody>
<tr>
<td>N=7</td>
<td>N=10</td>
<td>N=6</td>
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Administrator Focus Group

The administrator focus group consisted of school principals (2 elementary, 2 junior high, and one high school) and two central office personnel who work with curriculum. Six persons attended the focus group. Sample responses are listed in Table M.

The administrative responses varied somewhat due to services provided in each building or at each grade level. Services delivered vary by grade level and building. Enrichment occurs at the primary setting (K-3) for some students, although it is teacher and building dependent. Fourth grade students receive pull-out instruction for language arts. Fifth and sixth grade students receive pull-out instruction for language arts and mathematics enrichment weekly. In addition, those students who qualify as superior academically in the fifth and sixth grade receive instruction for all subject areas in a self-contained setting. The junior high school provides
honors classes, but the courses include more than just gifted students, and, as many administrators suggested, the courses are not considered gifted courses per se and teachers have not been trained in gifted provisions. At the high school level, gifted students are encouraged to participate in honors courses, post-secondary enrollment options (PSEO), and advanced placement courses.

In the regular classroom, most of the observed instructional strategies for gifted students were mentioned at the elementary level. Literature circles, higher level books, flexible grouping, and tiered lessons were described as strategies administrators have noticed in some classrooms, but not consistently. One principal noted that his building has just started training on differentiated instruction but it is not happening in all classrooms. At the junior high level, teachers mostly employ literature circles and varied levels of reading selections. High school services center on self-selection of courses.

Strengths of gifted services as perceived by the administrators include the grouping options at the elementary level so students can spend more time with their peers. The junior high level administrators felt that there were some higher level courses available for all students, including gifted. Additionally, the curriculum is aligned to state standards, which many administrators felt benefited gifted students as well as other students in the school.

Barriers to the provision of gifted services include a struggle with identification timing for service placement and actually selecting which students are gifted based on how they thrive within the service options provided. A lack of training of regular classroom teachers on meeting the needs of gifted within their classrooms and equity issues and funding regarding gifted education versus other special needs students were also reported. One administrator noted, “Teachers are not trained in dealing with gifted students.” Another suggested that “we need more instruction to address gifted needs including a different mindset for how instruction is delivered. The junior high school honors classes are not gifted classes.”

Due to an administrator meeting immediately following the focus group, questions 5 & 6 were combined. Overall, most administrators were uncertain of the effectiveness of gifted services. Their data regarding services include student success in advanced high school classes, happy parents, and student grades. However, as one administrator commented, “Gifted students can perform well but it doesn’t mean we’re meeting their needs.”

Classroom Teachers
Ten teachers representing elementary, middle, high school and gifted attended the focus group. Sample responses to each question are listed in Table N. Overall, the teachers were pleased with the services provided and positive regarding gifted student options within the district.

Program services listed by teachers included honors courses, Advanced Placement classes, Voyage (4-6 pull-out program in language arts and math enrichment 5-6), self-contained 5-6 program, and competitions such as Science Olympiad, Invention Convention, spelling bee, Mock Trial, In-the-Know, and state math tests.
When asked to explain the services provided in the regular classroom, many strategies were listed. At the high school level, teachers listed utilize modulated expectations, extra credit, clubs such as art, drama, languages, music, or Science Olympiad, and open-ended projects. Middle school teachers said they create rubrics that go above the normal classroom expectations, provide more appropriate topics and writing prompts, choices in products, open-ended projects, and technology options such as technology partners and the school wide news show, run by advanced students. Elementary level teachers incorporate tiered learning centers, higher level questions, independent study, and some enrichment packets such as logic puzzles, math enrichment pages, and reading folders. In Voyage, students work at a faster pace with more freedom of choice and in-depth projects and study.

When discussing the strengths of the gifted program, almost all of the teachers listed the Voyage program as a positive way for students to be served. In this self-contained program, students can be with like peers the majority of a school day, which allows gifted students study in-depth content in an environment where as one teacher wrote, “It builds their courage to be themselves”. Others suggested that it’s okay to be smart when students are together in the Voyage program. Likewise, teachers at the high school level felt that there were many good teachers who wanted the best for gifted students. In Advanced Placement classes in particular, students have commented to teachers that they feel “safe to be smart” and feel like they are treated as equals or at least treated with respect for what they know. Additionally, there are many clubs in the arts available for gifted students at the high school. Junior high teachers suggested that some student needs are being met based on individual teacher strategies. Most of the teachers concurred that there are “great opportunities for linguistically gifted children”.

Barriers to the provision of the continuum of services varied. Most teachers commented on the lack of services at the junior high level as well as the lack of resources to continue the Voyage program in older grades or lower grades. In addition, there was a strong focus on social-emotional issues during transition years from intermediate school to middle school, especially when gifted students had been together from 4th through 6th grade. Another area of concern included the matching of identification to instruction. For example, a few teachers mentioned that “kids who are pulled out of language arts to do gifted stuff miss the instruction and are behind”. Other teachers noted that there are slots for only 50 gifted students to be served in Voyage, therefore, many students who are equally as gifted may not be allowed into the program. Furthermore, the program focuses on language arts, even though many of the students have identified strength areas in the mathematics and sciences.

Teachers also suggested that additional staff development be available. Many teachers perceived that teachers and administrators are resistant to options for differentiation and acceleration. As one teacher commented in the large group discussion “many times [in high school and junior high honors classes] the teachers teach the same material, just more of it.” In addition, the group noted that not all educators recognize the needs of gifted students due to a lack of training. This includes social-emotional needs and underachievement, which was said to be problematic at the junior high level, especially. One teacher wrote, “Transition from pull-out years to junior high is not smooth. We lose smart girls and defiant gifted boys who are gifted when they decide they don’t want to be smart anymore. Teachers of honors classes don’t
address other issues of giftedness such as perfectionism, unrealistic expectations, test anxiety, testing pitfalls, and physical-emotional-intellectual asynchronous development.”

The final two questions were again combined due to a lack of time. Teachers stated that their data comes from surveys from students and parents, anecdotal evidence and stories from parents who discuss how much their child has grown since being served in Voyage, and positive feedback from parents, grandparents, and relatives after students are out of the program. Furthermore, teachers noted that over 600 new students move in to the district each year. Many ask about the Voyage program and as one teacher stated “everyone wants in”. Teachers also noted that no one leaves the program. The attrition rate is minimal. The only students who leave the program are the ones who “self-destruct out”. Test data results from the Stanford Achievement test are given to teachers each year; however, no systematic aggregations are completed at this time. Teachers of gifted do examine the results of gifted students but tests are not used to make decisions or to determine growth gains.

**Parent Focus Group**

Parents listed similar responses regarding the services provided as the other groups. An outline of all responses is listed in Table O. The parents were enthusiastic and positive about the program options for their children. They were most pleased with the overall concern of the teachers for children in the district, the opportunities provided for gifted within the district, and especially the opportunities for grouping with other gifted students. One parent suggested that the gifted program, Voyage, “gave my child something to look forward to.” Another parent suggested that grouping, especially, “allows the child to be with peers of similar academic strengths. They don’t feel ostracized for being smart.” However, they are concerned that the regular classroom teacher’s acceptance or knowledge of gifted students and subsequent modifications of the curriculum for gifted learners varied by school year and teachers with some irregularity. Parents attributed this to a lack of training on the part of regular classroom teachers.

Parents explained that many times their children were not allowed to move at a faster pace, received more easy work if they finished early, or were held back. One parent wrote, “My child was not challenged at the elementary level. They were not allowed to go beyond the regular curriculum, regardless of what their skills were.” This sentiment was perceived whether students were served in VOYAGE, the self-contained option, or through cluster-grouping. Similar to other groups, the parents also noticed that there were equally qualified students who do not receive intense services because of the low district cut-off of 45 students in certain programs. Parents also seemed concerned that program was mostly a Language Arts based program. One parent said, “At the 4th grade level they were pulled out of the regular education class during language arts. One of my children is very gifted in math, but not language arts.”

Regardless, parents perceived the services that are provided to be beneficial overall and they felt that their children would be better prepared for college entrance and coursework. They measured the success of the program based on student ACT and SAT scores, their student’s love of learning, and success of students from the program getting in to college.
Findings

The evaluation team reviewed and synthesized all data collected across the sources cited in this case study and provides the following key findings for consideration. Each finding is followed by a data source code. Findings were listed if at least three data sources listed the issue.

<table>
<thead>
<tr>
<th>Key Finding</th>
<th>Focus Group</th>
<th>Document Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program services, goals, and curriculum courses of study need to match the child’s identification areas and include rigorous content. Program services, especially 3-8, are language arts laden regardless of the strengths or identification areas of the student. There is also a disconnected between program goals, courses of study listings, and reported services.</td>
<td>T, A, P, I</td>
<td>DA</td>
</tr>
<tr>
<td>There is an inequity regarding the resources needed to serve the students who qualify for programming. A cut-off number is instituted regardless of other equally qualified students due to a lack of resources to provide services.</td>
<td>T, A, P, I</td>
<td>DA</td>
</tr>
<tr>
<td>Additional professional development, policies for regular classroom service options, and accountability measures are needed for regular classroom teachers who have a lot of the responsibility to serve gifted students. This needs to include rigorous curriculum options in addition to strategies.</td>
<td>T, A, P, I</td>
<td></td>
</tr>
<tr>
<td>K-3 services are needed as well as additional services at the middle school and high school, in order to provide a continuum of services, K-12.</td>
<td>T, A, P, DA</td>
<td></td>
</tr>
<tr>
<td>Data is gathered unofficially. Therefore, program effectiveness measures are not systematized.</td>
<td>T, A, I</td>
<td></td>
</tr>
<tr>
<td>Grouping options are perceived as being effective for student social-emotional needs and continued academic growth, although transition years from self-contained options to middle school need added support.</td>
<td>T, A, P</td>
<td></td>
</tr>
</tbody>
</table>

Recommendations:

The following issues, based on the findings, may be considered and developed into action plans for the district.

- The program services should match the child’s needs.
- Resources need to be instituted to include all students who qualify for services at equal levels.
- Teacher variance regarding service provisions needs to be monitored. Teachers need to be given the resources to adjust learning for gifted students in the regular classroom, including more rigorous options.
- K-3 programming should be instituted.
- The coordinator role includes more than gifted responsibilities. The coordinator is also in charge of curriculum alignment, testing, and other ancillary responsibilities that may make it difficult to promote program continuity, growth, and a continuum of services.
• Re-examine the documents in terms of connectivity of program goals, course of study, and policies needed including how those align to the actual services. A scope and sequence of goals and suggested curriculum may tighten the inconsistency of service issues and the perceived lack of rigor.
• Provide professional development opportunities for classroom teachers, K-12, in specific content areas.
• Re-examine the junior high services as aligned to gifted scope and sequence outcomes and program goals.
• Systematize data gathering (anecdotal and quantitative) in order to measure program effectiveness.
Table M: Administrator Focus Group

<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
</tr>
</thead>
</table>
| What are the different ways in which gifted students are served in your district or your building? | • K-3 (identified only, some enrichment)  
• Resource leader for regular education teachers (ideas and materials)  
• Language Arts gifted classes 4-6 (pull-out); some math enrichment in the regular classroom for grades 5-6  
• Self contained classes 5-6 (all subjects)  
• Honors, AP, and PSEO at the high school  
• HS credit in 8th grade for math, science, and foreign language |
| How are gifted students’ needs being met in the regular classroom?      | • *Tiered lessons and grouping*  
• *Literature circles*  
• “We are inservicing our teachers this year. Teachers are using a variety of differentiated instructions.” |
| What are the strengths of gifted services?                              | • *Small class size, higher level classes*  
• *Elementary students can spend time with like students*  
• Great selection of advanced classes at the Jr. High and High School. |
| What are the barriers or limitations that prevent the provision of services? | • “The affective domain needs to be addressed and a setting for this needs to occur.”  
• “Teachers are not trained in dealing with gifted students”  
• “We need more instruction to address gifted needs including a different mindset for how instruction is delivered. Faster or more work doesn’t make it advanced. The junior high school honors classes are not gifted classes.” |
| How do you know the gifted program is effective?                       | • “I’m not sure how effective the program is at the Junior High level”  
• “Parents want it!”  
• “Students and parents are happy with services provided.” |
<p>| How do you assess gifted student learning?                             | • “Gifted students can perform well but it doesn’t mean we’re meeting their needs.” |</p>
<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the different ways in which gifted students are served in your district or your building?</td>
<td>“Students are serviced by pull-out Language Arts classes in 4th; 5th all subjects; as those students progress through the system honors/AP classes are offered. For those who fail to be admitted to programming, teachers are available for consults to adapt curriculum appropriately.”</td>
</tr>
<tr>
<td>How are gifted students’ needs being met in the regular classroom?</td>
<td>“Clubs are available for students with interest [at the high school]: art club, drama, Spanish, German, Science Olympiad, etc. also extra music groups such as jazz band.” “Grading rubrics that provide for achievement above the standards” “Some independent study in areas not serviced by 4th grade pull-out program (after mastery of grade level curriculum is demonstrated)” “I offer/give assignments that let the students take as far as their creativity/ability will allow them to go” “We do a lot of debates, discussions, projects, and labs”</td>
</tr>
<tr>
<td>What are the strengths of gifted services?</td>
<td>“Programming for 4th grade allow for more choice and flexibility in facilitation. It encourages and develops students’ self concepts and creates an atmosphere of safety. It’s ok to be ‘smart’.” “Students are all together for 4th-6th grade and in fifth grade they are serviced in all areas.” “Great opportunities for linguistically gifted children.”</td>
</tr>
<tr>
<td>What are the barriers or limitations that prevent the provision of services?</td>
<td>“No math programs.” “The service is mostly in the language arts. Many students got into the program based on their math/science scores.” “Teacher resistance to options for differentiation and administration resistance to acceleration or other options.” “Not enough gifted students are serviced because of limited resources to continue gifted programs (Voyage) to the middle school.” “Once the VOYAGE population is determined, no additions are allowed unless #’s drop.” (limited to 50 students) “Transition from pull-out years to junior high is not smooth. We lose smart girls and defiant boys who are gifted when they decide they don’t want to be smart anymore. Teachers of honors classes don’t address other issues of giftedness such as perfectionism, unrealistic expectations, test anxiety, testing pitfalls, and physical-emotional-intellectual asynchronous development.”</td>
</tr>
</tbody>
</table>
## Table O: Parent Focus Group

<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
</tr>
</thead>
</table>
| What are the different ways in which your child has been served in the district? | • 2nd grade – enriched reading; VOYAGE – 4, 5, 6  
• Honors at the junior high and high school  
• Post-secondary enrollment  
• Mostly in language arts  
• One on one in the classroom  
• Child moved on to college with numerous credits already earned  
• VOYAGE, accelerated math, honors, & AP  
• Access to various clubs and extra curricular because of advanced class performance |
| How are your child’s needs being met in the regular classroom?           | • “My child was not challenged at the elementary level. They were not allowed to go beyond the regular curriculum, regardless of what their skills were.”  
• [Child’s name] was not challenged academically until high school. Even though she had teachers who allowed her to work ahead or read independently, there were no challenges or obstacles to her learning.”  
• Team Physics at the high school  
• Independent reading levels, accelerated math/contract math by some teachers  
• “Teachers have used my daughter as a ‘study buddy’ – partnered with a slower learner so that she could help that child” |
| What are the strengths of gifted services?                               | • “The district has exceptional teachers that are able to involve all kids in the learning process.”  
• “Gave my child something to look forward to.”  
”Friendships formed with classmates because they’ve been together for so many years.” “Allows the child to be with peers of similar academic strengths. They don’t feel ostracized for being smart.”  
• “Chance to delve more deeply into subjects – use higher level thinking skills – not just ‘more’ work.” |
| What are the barriers or limitations that prevent the provision of services? | • “I would have liked the formal program to start in 1st grade.” “Not much opportunity 1st, 2nd, or 3rd grade.”  
• “More students could benefit from being a part of a program”  
• “At the 4th grade level they were pulled out of the regular education class during Language Arts. One of my children is very gifted in math, but not language arts.” “Poor writers struggle in VOYAGE.”  
• “Only the top 45 students get serviced”  
• “Teachers not trained in gifted education” |
| How do you know the gifted program is effective?                         | • ACT and SAT test scores  
• Better prepared for college courses  
• Love of learning  
• “Earlier gifted programs prepare student for advanced high school and college courses.”  
• “Success getting in to college” |
On April 5, 2005 a member of the William and Mary research team spent the day in Salem City School District to examine the continuum of services provided within the district. The case study activities included:

- Administrator focus group
- Teacher focus group, including teachers of gifted
- Parent focus group
- Individual interviews (2): Superintendent and District Gifted Coordinator
- Collection of relevant documents related to the continuum of services to be analyzed

Overview of Service Model(s) Employed in District

Salem City has four distinct service options. The consultation model is employed in 3rd and 4th grades serving as an inclusion model. The gifted resource specialist goes into the classrooms and serves the gifted students within their regular classroom. The contact time in the inclusion classrooms ranges from once a month in 3rd grade classrooms to 30 minutes/week in 4th grade classrooms. Typically, enrichment activities are employed during the consultative time. In 5th and 6th grade, the school district employs a one day/week pull-out model. In 7th and 8th grades, gifted students are ability-grouped for a daily reading class. At the high school level, Salem City includes Honors classes at the ninth and tenth grade level, and Advanced Placement course options for 11th and 12th graders. Beginning next school year, Salem City is expected to form a partnership with the University of Pittsburgh in order to offer students additional advanced courses, such as computer science, through the university. The school system employs grade skipping on a case-by-case basis. Lastly, many gifted students participate in extra-curricular competitions and events that enrich their school experience. All students who are served have written education plans that are intended to guide their array of services. These plans are required by Ohio regulations.

Document Analysis:

The following relevant documents were submitted for review:

- Salem High School-registration guide, post secondary enrollment guidelines, written education plan (WEP) for 1 H.S student, high school TAG newsletter
- 1 page description of gifted programming and guidelines for developing curriculum units of study attached to sample report card and WEP
- Curriculum units or lesson plans: 1 sample 3rd grade inclusion lesson plan, 1 sample independent study fall fair unit for grades 4-6, and 1 reading enrichment class “mystery” unit for grades 7 and 8.
- District policy and plan for identification
- 2004-2005 Gifted Data

Salem High School documents

The high school TAG newsletter is produced three times a year, fall, January and June. It has one main article on the front typically pulled from a magazine (for example, USD Magazine) with tips for high school students, such as college admissions. The rest of the newsletter provides
information on summer programs, deadlines for upcoming events, ACT testing information, etc. It is produced by someone in the talented and gifted office. Salem Senior High School registration guide is typical of most high school course guides. It provides overall information about course offerings at relevant grade levels in content areas. It describes graduation requirements, drop/add course policies, athletic eligibility and diploma options. There is a one page description for “early graduation plan,” and “advanced placement courses.”

A WEP for a high school student who wanted to take an independent study was submitted. The WEP listed the student’s identified area of giftedness and the service to be provided to the student was marked “independent study”. Attached to the WEP was a description of the independent study project. Lastly, guidelines for post secondary enrollment programs were enclosed, describing the process and regulations covering the program.

**Gifted Program**

A one-page description of Salem City Schools’ gifted program was submitted. It contains three sections. The first section lists eight concepts for student development that curriculum units should contain (e.g. creative thinking, independent study, research, etc.). The middle of the sheet contains curriculum unit suggestions, and the last section of the page describes the overall program (inclusion, pull-out, etc.) There is no contact information and the relative sections do not seem to go together. Attached to this page was a sample report card for a gifted student, with the eight concepts listed and a ranking system of 1-3 next to each concept. 1=uses infrequently; area for growth; 2=relies on this area; uses often and 3=a strength area; well-developed. On the back of the report card was a space for a student to check indicators for a self-evaluation. Indicators included items such as “I worked to the best of my ability,” and “I was organized”. Lastly, a blank WEP was submitted containing three sections; student information (including area of identification), programming and services (including the eight concepts that appear on the report card) and an area of appropriate signatures.

**Curriculum Units/Lesson Plans**

The lesson plans for the mystery unit (grades 5-8) and the fall fair unit/independent study (grades 4-6) followed a similar outline. The sections in the outline are as follows: introduction, goals, vocabulary, readings, activities, and evaluation. Both submissions included a novel as the catalyst for the activities and vocabulary. Both submissions included in the evaluation section, student self-evaluation and teacher evaluation processes. The goals seem to be driven from the content standards. It is not explicit on either lesson plan where the concepts that are suggested in the program overview sheet and used in the report grades are integrated or even referred to.

The sample lesson plan for the inclusion class was a 1 page sheet with six sections describing what students would be doing relative to each section. The six sections are language arts, logic and reasoning, social studies, creative problem solving, fine arts, and extra activities. A brief description of activities follows each heading. For example, under the logic and reasoning heading, it states that students will “use deductive reasoning to solve logic problems arranged in a grid fashion. They must use the clues to cross out wrong answers and circle the right answers.” This format is not similar to the other submissions as there are no goals, vocabulary, evaluation, etc. and no alignment to the concepts suggested in the program overview for student development. All submitted lesson plans did not explicitly address how these units
are differentiated for gifted students. They are enrichment-based and inclusive of many process skills, such as writing, problem solving and divergent thinking.

District policy and plan for identification

This is a one page flyer for parents with the following sections: gifted definition and practice, screening and assessing, 3 stages for identifying, transfer students, withdrawal, and appeals process. The rest of the tri-fold brochure describes the identification instruments and scoring requirements and Salem City’s services for gifted students. Along with the brochure were the board of education district policies and guidelines on gifted education and identification.

2004-2005 Gifted Data

The 2004-2005 gifted data is a chart listing the number of students per grade level, the number of gifted students per grade level and their areas of identification. There is no disaggregating by ethnicity, gender, or economic levels.

Focus Groups:

Teacher, parents and administrator focus groups were held, each lasting approximately one hour. The focus group results will be discussed individually organized by groups. In addition two interviews were conducted; one with the district Superintendent and the other with the district coordinator of gifted. The relevant participant numbers for each focus group are listed below:

<table>
<thead>
<tr>
<th>Focus Group Participants by Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
</tr>
<tr>
<td>N=11</td>
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</table>

Teacher Focus Group

Eleven teachers were present at the focus group session which was held in the school board office. Three teachers were from K-3 grade level cluster, two teachers from the 4th-6th grade level cluster, two teachers from grades 7 and 8, two high school teachers, one school psychologist (who conducts the IQ testing), and one visual arts teacher. See Table P for illustrative comments for each question.

The teachers shared the four main service provisions that are delivered in grades 3-12: an inclusion model in grades 3 and 4 where the consulting gifted teacher goes into the classroom to deliver services, a pull-out model in grades 5 and 6 which occurs 1 day per week, a reading class in grades 7 and 8 which meets daily for a 42 minute class period, and honors courses throughout the high school with Advanced Placement courses for 11th and 12th graders. There is an accelerated math track with Algebra being offered in 8th grade, Geometry in 9th, and Algebra II in 10th grade for eligible students. Additionally, high schools students have post-secondary enrollment options through Kent State and Youngstown State University. Beginning Fall 2005, Salem City is expected to collaborate with University of Pittsburgh in order to offer AP computer science and AP Chemistry for high school students. There is no formal visual arts program for gifted students. Teachers mentioned that competitions such as Destination
Imagination or Academic Challenge were another way in which gifted students are served. Grade skipping exists on a case-by-case basis.

Themes that emerged with regard to differentiating curriculum and instruction were providing students with in-depth research, tiered assignments, projects based on student choice, and thematic approaches to integrating the curriculum. Teachers mentioned that their expectations for gifted students were different in terms of the quality of assignments or the nature of classroom responses. They mentioned competitions as extensions for students. Some teachers pre-assess and then allow alternative assignments based on student interest. Lastly, allowing students to self-select reading materials was another way that teachers differentiate. They mentioned instructional processes such as problem solving, logical reasoning, or stories with holes that allow for more divergent responses.

Strengths of the program clustered around four main areas; parental support, the identification process, strong teacher to teacher relationships, and positive attitudes and perceptions about gifted students throughout the district. Teachers shared that there is strong parental support and that parents are involved at all stages of development. Many teachers commented that the identification process has improved and that referrals can be made all year and the screening process is on-going and more responsive to teachers and students. The regular classroom teachers that collaborate in the inclusion model with the elementary gifted resource teacher felt that a strong working relationship existed between the professional staff; “The gifted teacher is able to specifically focus on my gifted students and give them attention that I can’t always give.” Additionally, several teachers mentioned that the teachers teaching gifted students were strong and “knowledgeable.” Lastly, teachers felt that generally there is overall administrative, community and teacher support for the program due in part to its longevity.

Limitations to an effective service delivery model cited by the teachers included funding, contact time, and breadth and depth of services. Many teachers cited funding as a major barrier including the need for additional staff and materials in order to meet the needs of the gifted. Secondly, teachers addressed concerns about not having enough contact time with students at all levels, especially in grade levels 3rd-6th where gifted students’ contact time with the teacher ranges from once a month to once a week. Lastly, teachers cited the breadth of the program as a limitation, “We need to increase services at the elementary level,” explained one teacher “and consider serving other types of giftedness, not just superior cognitive.” At the high school level a teacher mentioned that there has been a course reduction from an eight period day to a seven period day, “so course offerings for gifted students have been compromised.”

Teachers perceptions about program and student effectiveness centered around formative and summative assessments including state testing, AP/SAT scores, enrollment figures in upper level high school courses, college admissions, growth in enrollment numbers of students attending a summer honors institute, and positive feedback from parents and students.

Parent Focus Group
Nine parents were present at the focus group session which was held in the school board office. The parent’s children spanned the gifted program, K-12. See Table Q for illustrative comments for each question.
Parents spanning the K-12 continuum were present and responded to the first question about service delivery in terms of their respective children. Parents of elementary aged children mentioned the pull out model once a week for enrichment. Middle school parents spoke to the reading class at the 7th and 8th grade levels, and high school parents mentioned the AP courses. Several parents mentioned available competitions such as academic challenge or Math counts as another way that their children get served. Overall they felt that having their children identified as gifted allowed for other opportunities that may not be ordinarily provided.

Responses to how their child’s needs are met in the classroom varied. Most parents responded that individual teachers differentiate through reading selections, projects, or participation in various activities such as English festival or the school newspaper. Yet, several were not sure, and had comments such as, “I trust that her needs are being met, but I don’t know for sure.” They felt that it was very teacher dependent and if their child had an effective teacher, then they were satisfied. At the high school level, parents commented that courses were “self selected,” so they assumed that their child’s needs were met, due to the nature of the course.

Perceptions of the strengths of the program centered on the strengths of the teachers and their willingness to enrich gifted students, communication to parents about special opportunities (e.g. Midwest Talent Search), and the identification process. Parents felt that the teachers were committed and talented, as evidenced by the longevity of some of the teachers. Secondly, while they expressed concerns about lack of frequent communication as to student progress, the communication provided about enrichment opportunities such as summer programs or different local and state competitions was effective and appreciated. Lastly, several parents mentioned that the identification process was better than it use to be.

Limitations included teacher’s lack of ability to differentiate, communication, and issues with course offerings. Parents felt that some teachers were not able to differentiate either due to lack of time and money or due to teacher’s capacity. Additionally, while some parents perceived the identification process as a strength, others perceived it as a limitation. “The definitions about what qualifies a child to be gifted needs to be better communicated,” shared a few parents. At the middle school level, students are grouped in reading. Parents felt that equal emphasis should be considered in math and science. Lastly in high school, some parents perceived that the block scheduling system has precluded their children from taking other advanced classes because the schedule is less flexible.

Parents perceived program effectiveness based upon his/her child’s enthusiasm for the program or based upon outside measures such as AP scores, college admissions, or external competitions. They felt that the gifted program provided opportunities for their children not to be bored and an opportunity for their children to be with like-peers.

Some parents mentioned test scores as a measure of effectiveness, whether state proficiency tests or teacher made tests.

Parents assess their child’s learning through informal mechanisms such as conversations in the car or in the home where the child pulls information that they have learned into the context
of the conversation. Several mentioned seeing increased interests into different areas from exposure in their gifted classes. Some parents mentioned that the fact that their child can do independent research is evidence of their learning. They did not mention more formal measures such as state or national tests.

**Administrator Focus Group**

The administrator focus group consisted of a variety of administrative personnel. Five persons attended the focus group including the director of state and federal grants: two school board members, one primary principal, and the administrative assistant for the curriculum/special education/gifted education. See Table R for illustrative comments for each question.

When asked about the service models employed in the district, administrators responded with the range of services from inclusion at the elementary level to AP courses at the high school. They mentioned that the administrative support is solid and has grown and that parents are supportive. Several expressed that they viewed the inclusion model in 3rd grade as a positive development. They were aware that students had additional opportunities for enrichment outside of school through the summer programs or competitions. They felt that students were being identified and then served in areas of strength.

The ways in which administrators perceive that gifted students’ needs are met in the classroom are higher level activities, faster paced curriculum, and enrichment opportunities. Administrators felt that most of the middle and high school classes were accelerated in pace and provided depth through research or projects. They did feel that teachers could individualize in their classrooms, as needed.

Themes that emerged regarding strengths of the program were identification of students, leadership, curriculum, and commitment of staff, parents, community. They shared that students are identified early and therefore can be serviced early. They spoke positively about the administrative support and leadership that was provided by the district coordinator. They felt that the curriculum offered was effective and responsive. An example of this was at the middle school level students can receive high school credit for Algebra.

Limitations of the program included some teachers’ and administrators’ resistance to gifted. Administrators also mentioned lack of consistency of services and that in certain grade levels, services do not exist. Even though inclusion was seen by some as a strength, it was seen by others as a potential limitation because “inclusion has its own set of issues-regular teachers hold back.” Lastly, several administrators mentioned not enough teachers or money in order to effectively serve gifted students.

For the most part, administrators perceived program and students successes in terms of performance results. They felt that the scores on AP tests, the number of colleges and scholarship money, and the number of student who receive awards through competitions were evidence of an effective program. Some administrators mentioned student enthusiasm or enjoyment of the program as other indicators for program effectiveness.
**Interview with District Coordinator**

Dr. Elissa Brown interviewed Ms. Judy Herron, the district coordinator of gifted services for Salem City Schools. The interview last approximately 30 minutes to address the six questions of interest. Ms. Herron serves eleven school districts through the Columbiana County Educational Service Center. Ms. Herron described the four distinct service models; inclusion, pull-out enrichment, daily reading class, and Honors and AP courses at the high school. She expressed concerns about the degree to which teachers were differentiating curriculum and instruction. “I don’t see a lot of that. We need more professional development with regard to differentiation. What I like about the consultation model is that it allows for the classroom teacher to see how the gifted teacher differentiates and allows them to work together as a team.” She felt that the strengths of the program included strong supportive administration, including the director of curriculum and instruction as well as the Superintendent; effective teachers, and the size of the district. “Salem City is small and because of that I know many of the people. The staff knows the community and the parents know the teachers.” “We have supportive regular education teachers and when we ask them to step up to the plate, they do.” The limitations cited were funding and teacher resistance. “The state has unit funding so it funds one teacher and there is no funding to support service options.” She shared that while most teachers were supportive, there were still some resistance to gifted. “Some teachers just don’t see that these students have special needs.”

In terms of program effectiveness, Ms. Herron spoke to measures such as scores on the Ohio proficiency tests, satisfaction surveys, and numbers of students participating in the program and staying in the program. “We’ve built the recognition into students that learning is important.” In terms of student assessment, she shared that she is keeping track of student numbers who are qualifying for the Midwest talent search. Additionally, she said that “students are not hiding their giftedness. They participate in competitions and are enthusiastic about the program.” She mentioned that Salem has a new database that will be able to track gifted students’ performance. “This is the only district that I work with that has the database. It will give us the ability to see what we have and to focus on what we need.”

**Interview with Superintendent**

Dr. Elissa Brown interviewed Dr. David Brobeck, the superintendent of Salem City Schools. The interview last approximately 30 minutes to address the six questions of interest. Dr. Brobeck has been Superintendent in Salem City schools for five years. He expressed that he was trying to get the district to a more competitive level. He feels that the district is doing a good job with the gifted program but he would like to see program improvement. “We serve our gifted students but we should be doing more and at a competitive level with some of the wealthier districts.” He was unsure the degree to which teachers are differentiating. “I have a ninth grader identified and I don’t think she is encouraged to go above and beyond.”

When asked about the relative strengths and limitations of the program, Dr. Brobeck commented on the elementary inclusion model. “I think that’s working well, but it still goes back to teacher willingness. If the teachers are willing to accept coaching, then I think we would see more differentiation in our classrooms.” He felt that certain philosophies precluded the program being as strong as it should be. “Fair is not necessarily equal. Teachers need to be willing to look at individual students and vary their expectation.” He also cited state funding as a limitation.
In reflecting upon program and student effectiveness, Dr. Brobeck shared that he receives informal positive feedback from parents. Another measure he cited was students who return from college and report that they felt well prepared for higher education. “We also have students staying in the program.” He did think that maybe a more formal process of collecting data should be in place to show program effectiveness. He was less sure of gifted students’ performance and again, referred to his daughter as not being challenged. “We need to do a better job of educating the community, too. They think these kids are happy and their needs are being met. They do not necessarily see that for some students, there is frustration.” Overall, he shared that the administrative team and the majority of teachers were passionate and willing to provide the best education they could for gifted students.

Findings

The evaluation team reviewed and synthesized all data sources cited in this case study and provides the following key findings for consideration. Each finding is coded by the appropriate data source. Findings were listed if a minimum of three data sources listed the topic of the finding. Key for data sources is as follows: Teachers (T), Administrators (A), Parents (P), Interviews (I), and Document Analysis (DA).

<table>
<thead>
<tr>
<th>Key Finding</th>
<th>Focus Group</th>
<th>Document Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents overall are supportive of gifted program but there is some lack of communication as to the degree to which differentiation is occurring in the classroom.</td>
<td>T,P,A,I</td>
<td></td>
</tr>
<tr>
<td>The four distinct service models lack coherence, communication, and comprehensiveness.</td>
<td>T, A, P, I</td>
<td>DA</td>
</tr>
<tr>
<td>There is a lack of systematic evidence collected and analyzed to support program effectiveness.</td>
<td>T, A, P</td>
<td>DA</td>
</tr>
<tr>
<td>There is a lack of match between student identification and service delivery.</td>
<td>T, P</td>
<td>DA</td>
</tr>
<tr>
<td>Some teacher and administrator resistance to gifted students and/or gifted program exists.</td>
<td>T, A, P, I</td>
<td></td>
</tr>
<tr>
<td>Lack of systemic and integrated K-12 program structure exists, such as program goals, outcome measures for student progress, scope and sequence, curriculum, performance standards, service models, and professional development options for serving gifted students.</td>
<td>T, A, P, I</td>
<td>DA</td>
</tr>
<tr>
<td>Longevity of program, teachers, and consistent gifted enrollment numbers are perceived strengths.</td>
<td>T, A, P, I</td>
<td></td>
</tr>
<tr>
<td>Effectiveness of gifted services is teacher dependent.</td>
<td>P, T</td>
<td></td>
</tr>
<tr>
<td>Competitions and other extra-curricular options are perceived as strengths of program, and as a way to evaluate program effectiveness.</td>
<td>T, A, P, I</td>
<td>DA</td>
</tr>
</tbody>
</table>
Recommendations:

The following issues, based on the findings, may be considered and developed into action plans for the district.

- Services should be matched to identification. For example, in grades 7th and 8th, students are identified as superior cognitive, but the service is a reading class.
- The district has made a lot of progress in its flexibility for identifying gifted students and having strong teachers in the gifted program, but the services depend on both the parent’s abilities to advocate effectively for their children and to get a “good” teacher.
- There is a lack of systematic program articulation, philosophy, goals, etc., to guide a continuum of services and curriculum development. Additionally, there is no consistency between the types of experiences students may be receiving and the ways in which they are assessed.
- A system is needed to formalize data collection and analysis for program and student evaluation.
- Strong utilization of competitions and summer programs as extension opportunities for gifted students needs to be addressed.
- Professional development should be provided for classroom teachers and gifted teachers, K-12.
- A scope and sequence of goals and suggested curriculum may tighten the inconsistency of service models.
- Communication should be increased to all stakeholder groups.

Conclusion

Salem City has made a lot of progress with regard to its gifted program and the program is supported by multiple stakeholder groups. However, a closer look at the various service models with an eye toward coherence and an articulation of program goals, direction, curriculum employed, policies, and a process for determining program effectiveness need to be considered for program improvement.
<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
</tr>
</thead>
</table>
| What are the different ways in which you have been served in this district? | • “The gifted teacher comes to my classroom once a month and completes activities with my students.”
• “7th and 8th graders are pulled from regular reading and placed in an enrichment reading class which meets every day.”
• “We provide electives that challenge and specialize and we encourage participation in summer programs offered by state universities.” |
| How are gifted students’ needs being met in the regular classroom?        | • “Students are challenged with problem solving activities and I encourage logical reasoning.”
• “I have a variety of materials for different cognitive levels.”
• “My students use advanced texts, like a college anthology for poetry.” |
| What are the strengths of gifted services?                                | • “The program extends in grades 3-12; you don’t see that everywhere.”
• “I think it’s nice that the gifted teacher can expose all of my students to her enrichment activities.”
• “We have good parental support.”
• “All the teachers care about the gifted students and are very talented.”
• “The screening process is much better than it used to be.” |
| What are the barriers or limitations that prevent a comprehensive provision of services? | • “Would like to see more services for the arts and specific content areas.”
• “Not all teachers know how to differentiate.”
• “Some administrators are still resistant to the idea of serving the gifted.”
• “All AP courses need to be coordinated so that the teachers have the same goals. Right now, there is too much variation in the approach to the course and test.” |
| How do you know the gifted program is effective?                         | • “Students stay in the program.”
• “There’s been an increase in the numbers of students who attend our Summer Honors Institute.”
• “Feedback from students and teachers. Kids are excited.”
• “Our AP test results are good.” |
| How do you assess your gifted students’ learning?                        | • “They enjoy participating in the program and motivated to learn.”
• “I use a lot of rubrics, self-evaluations, and individual assessments.”
• “I keep notes on my identified students as to whether or not I think they’re working at the level they’re capable of.” |
<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
</tr>
</thead>
</table>
| What are the different ways in which your child been served in this district? | • “Focus on a variety of topics that they are not exposed to in the regular classroom.”  
• “Pull-out program once a week.”  
• “AP courses and accelerated class schedule.”                                                                 |
| How are your child (ren)’s needs being met in the regular classroom?    | • “Individual attention is given to my son based on his strengths.”  
• “They let them do projects on the computer, and learn PowerPoint or how to use the Internet.”  
• “Use books based on interest.”                                                                 |
| What are the strengths of gifted services?                              | • “There is a willingness among the teachers to consider how within their budget and time limits to meet children’s needs.”  
• “They are given additional opportunities based on their abilities.”  
• “Students are identified in different areas.”  
• “The AP teachers hold students to a higher standard.”                                                                 |
| What are the barriers or limitations that prevent a comprehensive provision of services? | • “Sometimes individual teachers cannot accommodate the gifted students because they have so many other students to worry about.”  
• “The scheduling at the high school is sometimes prohibitive.”  
• “The opportunities vary from class to class based on class size, teacher, materials available, etc. A limitation is the consistency of services.” |
| How do you know the gifted program is effective?                        | • “My child wants to go to the enrichment class.”  
• “My child has received local, regional, and national recognition for his academic accomplishments.”  
• “Look where our kids get accepted to colleges.”  
• “Our AP courses are accelerated and test results are good.”  
• “I’ve seen improvement in his self-esteem related to intelligence.”                                                                 |
| How do you assess your child’s learning?                               | • “The bottom line is that my children are now reading and are confident to achieve at the highest standards.”  
• “When we’re driving and he spontaneously talks about something that he’s learned. He adds to the conversation.”  
• “My child expresses interest in new areas or subjects, uses new vocabulary words and talks about what happened in school on enrichment day.” |
<table>
<thead>
<tr>
<th>Question</th>
<th>Illustrative Responses</th>
</tr>
</thead>
</table>
| What are the different ways in which you have been served in this district? | • “We have inclusion in 3rd, pull out in grades 4-6, daily reading instruction in 7th and 8th and AP courses at the high school.”
• “Gifted students are served after their identified.”
• “Students are made award of outside school activities, especially in the arts.” |
| How are gifted students’ needs being met in the regular classroom?       | • “Instructor concentrates more on higher-level thinking skills such as application and synthesis of information.”
• “Teachers are made aware of student’s identification areas and so can better meet their needs in the classes.”
• “There’s a more rigorous curriculum in all classes and it’s adjusted to the students.” |
| What are the strengths of gifted services?                              | • “Students in grades 7 and 8 get daily instruction without being pulled out of another class and in 8th grade they can get high school credit for taking Algebra.”
• “The commitment of the staff and school board to gifted students is strong.”
• “Kids are identified early and so services can begin.” |
| What are the barriers or limitations that prevent a comprehensive provision of services? | • “There are not enough services; grades 2,9,10”
• “Inclusion has its own set of issues.”
• “Not all teachers are gifted qualified and a few administrators are still resistant.”
• “In most cases, services are not provided on a daily basis.” |
| How do you know the gifted program is effective?                        | • “All the results; project results, competition results, awards received, and testing results.”
• “Colleges are giving our students scholarship money.”
• “Feedback from students and teachers. Kids are excited.”
• “Success of students on AP tests and the increasing number of students taking AP courses.” |
| How do you assess your gifted students’ learning?                       | • “Students response in classroom.”
• “Their participation in competitions.”
• “Students love the program. I see it affectively.” |
Summary of Case Studies

Case study data suggest that stakeholder groups are generally satisfied with their gifted programs and judge them superior to other programs they know about. Yet parents are vocal in suggesting the need for greater challenge and more options in the gifted program while administrators appear to be somewhat unaware of the nature of the program in their district. Teachers voice concerns about the lack of contact time for students to interact, the lack of time for professional development, and the lack of program structure. Some administrators and teachers appeared resistant to gifted programs, a concern also voiced by coordinators in the survey data. Strengths of the case study site gifted programs appeared to be in the quality of staff implementing the programs and the specific in school and out of school options that were provided at specific sites. Administrators seemed particularly pleased with in-building options and delivery in that context. Weaknesses across sites appeared to center on communication between and among constituencies within the gifted program and beyond it to the general education community, limited professional development for regular classroom teachers in gifted education, lack of comprehensive articulated service options, and the lack of curriculum rigor, especially at the elementary and middle school levels. No districts collect or use systematic student assessment or evaluation data to judge program effectiveness for improvement. Lack of coherence in documents and services provided was evident across all sites.
Section IV

Statewide Data Analysis

District Program Survey Results

By Annie Feng
Section IV: Statewide Data

A: Results from 2003-2004 Self-Report on Identification and Services for Gifted Students in Ohio School Districts

There are a total of 600 Ohio local districts providing gifted identification and services data to the state in their 2003-2004 Self Reports. Following are numerical results on items related to identification of underrepresented student populations and relevant written policies on gifted program services.

Section A- Identification of Traditionally Underrepresented Groups

School districts were asked to indicate their strengths in identifying underrepresented populations in their Self-Report. Table 1 presents the results, suggesting that a higher percentage of districts gave their attention to identifying students who are of low income families (60.2%), followed by identifying students with disabilities (29.8%), minority students (12.7%), and LEP (Limit English Proficient) students (4.3%).

Table 1: Strengths in Identification of Traditionally Underrepresented Groups (N=600)

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students with disabilities</td>
<td>170</td>
<td>29.8</td>
</tr>
<tr>
<td>Underrepresented ethnic group</td>
<td>76</td>
<td>12.7</td>
</tr>
<tr>
<td>Economically disadvantaged</td>
<td>361</td>
<td>60.2</td>
</tr>
<tr>
<td>Limited English Proficient</td>
<td>26</td>
<td>4.3</td>
</tr>
</tbody>
</table>

With respect to opportunities for improvement in identifying underrepresented populations, close to half of the districts (45.8%) indicated that their opportunities remained in the economically disadvantaged population, followed by a focus on students with disabilities (36.8%), minority (11.7%), and LEP students (8.2%) (Table 2).

Table 2: Opportunities for Improvement in Identifying Underrepresented Groups (N=600)

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students with disabilities</td>
<td>221</td>
<td>36.8</td>
</tr>
<tr>
<td>Underrepresented ethnic group</td>
<td>70</td>
<td>11.7</td>
</tr>
<tr>
<td>Economically disadvantaged</td>
<td>275</td>
<td>45.8</td>
</tr>
<tr>
<td>Limited English Proficient</td>
<td>49</td>
<td>8.2</td>
</tr>
</tbody>
</table>

Section B- Continuum of Services

Almost two-thirds of the school districts had a written policy on gifted services. These policies included descriptions of instructions and content differentiations, contact time per student, number of students receiving services, staff roles, and criteria for identification. However, 35.8% of the districts indicated that they did not have a written policy on any of the above-mentioned services (Table 3).
Districts were asked for projected number of increase or decrease of gifted students receiving services in 2004-2005. Compared to the total 2003-2004 numbers, the results showed that a majority of the districts (64.3%) indicated no change; 11.2% of the districts projected a decrease of 25% or more (5%) or 5-24% in numbers (6.2%). However, 24% of the districts noted that they would have an increasing number of students receiving services next year, and the magnitude of increase ranged from 5-24% (20.3% of the districts) to 25% or more (2.8% of the districts.) (Table 4).

### Table 4: Projected number of gifted students receiving services in 2004-2005 compared to services in 2003-2004 (N=600)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease by 25% or more</td>
<td>30</td>
</tr>
<tr>
<td>Decrease by 5-24%</td>
<td>37</td>
</tr>
<tr>
<td>About the same</td>
<td>386</td>
</tr>
<tr>
<td>Increase by 5-24%</td>
<td>122</td>
</tr>
<tr>
<td>Increase 25% or more</td>
<td>17</td>
</tr>
</tbody>
</table>

Districts were also asked for projected number of different services to be provided in 2004-2005 in comparison to previous school year. Based on districts’ Self-Report, two-thirds of the districts would retain a similar scale and pattern of services; 9.5% of the districts indicated that there will be significant (3.8%) or somewhat (5.7%) decreases of number of services provided for next year; 19% of the districts, however, projected a significantly (2.8%) or somewhat (16.7%) increasing number of services to be provided for in comparison to the previous academic year (Table 5).

### Table 5: Projected number of different services (B-1) provided in the 2004-2005 school year compared to those offered in 2003-2004 (N=600)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease significantly</td>
<td>23</td>
</tr>
<tr>
<td>Decrease somewhat</td>
<td>34</td>
</tr>
<tr>
<td>Remain similar</td>
<td>400</td>
</tr>
<tr>
<td>Increase somewhat</td>
<td>1</td>
</tr>
<tr>
<td>Increase significantly</td>
<td>17</td>
</tr>
</tbody>
</table>

### Section C- Acceleration

School districts also provided policy information on acceleration. Over three quarters of the school districts (78.3%) noted that they had a written policy that addresses early admission to Kindergarten; 40.5% of the districts had a written policy in place on grade skipping and 30.2% of the districts had a written policy on content acceleration (Table 6).
Table 6: Written policies on acceleration (N=600)

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade skipping</td>
<td>243</td>
<td>40.5</td>
</tr>
<tr>
<td>Early entrance</td>
<td>470</td>
<td>78.3</td>
</tr>
<tr>
<td>Content acceleration</td>
<td>181</td>
<td>30.2</td>
</tr>
</tbody>
</table>
B: Results of the Ohio School District Program Survey for Continuum of Services

The Ohio School District Program Survey for the Continuum of Services ODE Research and Development Project was developed to collect more information about the current status of gifted services delivered in the K-12 landscape in the State of Ohio. The survey was composed of 19 questions subsumed in four major areas of gifted program services: curriculum and instruction/differentiation, organizational arrangements, student performance and evaluation, and administration and change. Demographics of people who completed the survey were also collected.

The survey was developed by the College of William and Mary researchers and distributed by the Ohio State Department of Education to a stratified sample of 197 school districts using district size and social economic status as the two strata of sampling. The sample represented approximately a third of the school districts in the state (32%). Among the 197 school districts who received the survey, 127 returned the survey, a 64% rate of survey return.

The results of the survey are organized by the sections of the questionnaire. Omitted responses were excluded from the analysis on a variable basis. Open-ended responses from the questionnaire were coded, content analyzed, and incorporated at the end of each section.

Demographics

Individuals who completed the survey were asked to provide their role in the educational system. Fifty-nine percent of them were gifted coordinators, 14% of them served as gifted intervention specialists, and 24.4% of them served at both positions in their school districts. In addition to their specialty in gifted program services, some of them also served other roles in their school system, including director for curriculum and instruction, counselor, principal, assistant or associate superintendent, educational consultant, and director of special services (See Table 7).

Table 7: Position of Individuals Completing the Survey (N = 127)

<table>
<thead>
<tr>
<th>Position of Individuals</th>
<th>Frequency</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gifted Coordinator Only</td>
<td>75</td>
<td>59.0</td>
</tr>
<tr>
<td>Gifted Intervention Specialist Only</td>
<td>18</td>
<td>14.0</td>
</tr>
<tr>
<td>Both gifted coordinator and intervention specialist of the district</td>
<td>31</td>
<td>14.4</td>
</tr>
<tr>
<td>Other (overlapping with the coordinator and intervention specialist position)</td>
<td>19</td>
<td>14.9</td>
</tr>
</tbody>
</table>

In respect to the employment organizations of respondents, more than half of them (58.3%) reported being employed by their local school districts, 41.7% of them were hired by another organization to serve particular school districts; and 24.4% of them were double employed by both the local school district and another organization (See Table 8).
Table 8: Employer of Individuals Completing This Survey (N = 127)

<table>
<thead>
<tr>
<th>Employer of Individuals</th>
<th>Frequency</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed by the district named above Only</td>
<td>56</td>
<td>58.3</td>
</tr>
<tr>
<td>Employed by another organization Only but providing services to district named above</td>
<td>40</td>
<td>41.7</td>
</tr>
<tr>
<td>Employed by both the local district and another organization</td>
<td>31</td>
<td>24.4</td>
</tr>
</tbody>
</table>

With respect to individual credentials, a great majority of them (82.7%) reported having gifted validation or endorsement added to another certificate or license; 12.4% of them possessed provisional or professional gifted intervention specialist licenses; about 10% of them had Temporary Gifted Intervention Specialist License only; and 13.4% of them had no gifted education related license, validation, or endorsement (See Table 9).

Table 9: Credential of Individuals Completing The Survey (N = 127)*

<table>
<thead>
<tr>
<th>Credential of Individuals</th>
<th>Frequency</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>No gifted education related license, validation, or endorsement</td>
<td>17</td>
<td>13.4</td>
</tr>
<tr>
<td>Temporary Gifted Intervention Specialist License Only</td>
<td>12</td>
<td>9.4</td>
</tr>
<tr>
<td>Provisional or Professional Gifted Intervention Specialist License</td>
<td>16</td>
<td>12.6</td>
</tr>
<tr>
<td>Gifted validation or endorsement added to another certificate or license</td>
<td>105</td>
<td>82.7</td>
</tr>
</tbody>
</table>

* A survey might be completed by more than one person who bears different credentials.

Curriculum and Instruction

Among a list of 11 goals that classroom teachers are expected to employ in delivering curriculum and instruction to their gifted students, there seemed to be a consistent pattern that the frequency of employment declined with the school level. These strategies appeared to be most frequently used in elementary schools, followed by middle schools and high schools.

A great majority of the school districts (75% or above) noted that the following goals have been employed in delivering curriculum and instruction to gifted students in their elementary schools: “to enrich and extend the core curriculum” (87.4%), “to develop productive, complex, abstract, and/or higher-level thinking skills” (84.3%), to integrate basic and higher level thinking skills into the core curriculum (81.9%), to encourage the development of self-understanding (80%), and to develop research skills and methods (75.6%).

Except for the goal of encouraging the development of self-understanding, the above-mentioned four other goals were also perceived as being more frequently used in both the middle and high school, although with a decreasing percentage of usage compared to that of elementary schools. The focus on research skills and methods and integration of thinking skills into core curriculum appeared to be the top two goals at both middle and high school levels. However, it should be noted that by the high school level, nine out of eleven (82%) of these listed goals were employed in a minority of the school districts, suggesting a lower degree of emphasis in these areas of services at the high school level (See Table 10).
A few districts noted other goals employed, including leadership training, post secondary enrollment options, and subject acceleration. One school district noted, however, that they do not provide services for gifted students.

Table 10: Goals Districts Employed in Delivering Curriculum and Instruction to Gifted Students by School Level (N = 127)

<table>
<thead>
<tr>
<th>Goals</th>
<th>E.S.</th>
<th>M.S.</th>
<th>H.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. To enrich and extend the core curriculum</td>
<td>87.4</td>
<td>76.4</td>
<td>47.2</td>
</tr>
<tr>
<td>b. To integrate multiple disciplines into an area of study</td>
<td>71.7</td>
<td>55.1</td>
<td>23.6</td>
</tr>
<tr>
<td>c. To allow for the in-depth learning of a self-selected topic within the area of study</td>
<td>70.9</td>
<td>60.6</td>
<td>36.2</td>
</tr>
<tr>
<td>d. To develop independent or self-directed study skills</td>
<td>73.2</td>
<td>70.9</td>
<td>44.1</td>
</tr>
<tr>
<td>e. To develop productive, complex, abstract, and/or higher-level thinking skills</td>
<td>84.3</td>
<td>73.2</td>
<td>48.8</td>
</tr>
<tr>
<td>f. To focus on open-ended tasks</td>
<td>71.7</td>
<td>59.1</td>
<td>33.9</td>
</tr>
<tr>
<td>g. To develop research skills and methods</td>
<td>75.6</td>
<td>77.2</td>
<td>52.0</td>
</tr>
<tr>
<td>h. To integrate basic and higher level thinking skills into the core curriculum</td>
<td>81.9</td>
<td>75.6</td>
<td>50.4</td>
</tr>
<tr>
<td>i. To encourage the development of products that challenge existing ideas and produce “new” perspectives</td>
<td>61.4</td>
<td>61.4</td>
<td>33.1</td>
</tr>
<tr>
<td>j. To encourage the development of self-understanding, i.e., recognizing and using one’s abilities, becoming self-directed, appreciating likenesses and differences between self and others</td>
<td>79.5</td>
<td>67.7</td>
<td>38.6</td>
</tr>
<tr>
<td>k. To evaluate student outcomes by using appropriate and specific criteria through self-appraisal, criterion referenced, and/or standardized instruments</td>
<td>74.8</td>
<td>66.9</td>
<td>39.4</td>
</tr>
<tr>
<td>l. Other</td>
<td>2.4</td>
<td>2.4</td>
<td>2.4</td>
</tr>
</tbody>
</table>

With regard to curricula that were mainly used with districts’ gifted students, a great majority of elementary schools used teacher-developed curriculum units of study (85%), critical/creative thinking skills materials (79.5%), and group or individual projects (78.7%) as the major curricular materials; more than half of the school districts also reported using materials focused on self-esteem or social-emotional issues (54.3%) or regular textbooks (51.2%) at this level. The other less frequently used curricula at the elementary level were packaged curricula (37.8%), advanced textbooks (26%), and technology courses (7.1%).

More than two thirds of the school districts noted that their major middle school curricula for gifted students were group or individual projects (69.3%), teacher-developed curriculum
units of study (66%), and critical/creative thinking skills materials (64.3%); more than half of these districts also used regular textbooks for their gifted students. The other less frequently used curricula at the middle school level included materials on self-esteem and social-emotional issues (44%), advanced textbooks (37%), packaged curricula (28.3%), technology courses (15%), and AP or IB curricula (1.6%).

The high school curricula for gifted students were distinct from those mainly used at the elementary and middle school levels, with 59% of the districts noting AP or IB texts as a major source of the curriculum, followed by regular text books (44%), group or individual projects (41%), and advanced textbooks (35%). A quarter of the school districts also indicated using technology courses and critical/creative thinking materials. Some districts cited social esteem related materials (18.2%); very few districts (4.7%) appeared to use packaged curricula at the high school level (See Table 13). Other curricular options included academic contests, honor classes, and regular integration of technology in classrooms (See Table 11).

The above data showed that statewide curriculum options for gifted students at the elementary and the middle school levels were similar; although high percentages of the school districts reported more usage of these curricula at the elementary level than at the middle school level. The high school curricular options were distinct in using AP or IB curriculum for high ability learners. The use of teacher-developed curriculum units of study, thinking skills materials, social-emotional discussion materials, and packaged curricula appeared to decline as the grade level increased, whereas the use of technology and advanced textbooks seemed to increase.

| Table 11: Curricula Mainly Used with Districts’ Gifted Students (N = 127) |
|---------------------------------|-------|-----|-----|
| a. Teacher-developed curriculum units of study | **E.S.** | **M.S.** | **H.S.** |
| b. Packaged curriculum such as William & Mary curriculum, Philosophy for Children, Junior Great Books, etc. | 37.8 | 28.3 | 4.7 |
| c. Advanced textbooks (at least one grade level above) | 26.0 | 37.0 | 34.6 |
| d. Regular textbooks | 51.2 | 55.9 | 44.1 |
| e. Critical/creative thinking skills materials | 79.5 | 64.6 | 25.2 |
| f. Self-esteem, social emotional issue discussion materials | 54.3 | 44.1 | 18.9 |
| g. Group or individual projects | 78.7 | 69.3 | 40.9 |
| h. Technology courses (e.g., EPGY, Apex Online, etc.) | 7.1 | 15.0 | 25.2 |
| i. Advanced Placement or International Baccalaureate Curriculum | 0 | 1.6 | 59.1 |
| j. Other (please specify): | 6.3 | 6.3 | 7.9 |
With regard to differentiation services for special populations, 17.7% of the districts provided services differentiated for economically disadvantaged or culturally diverse gifted learners and 40.2% of the districts offered services for twice-exceptional children. The rest of the school districts had no options for gifted students of special populations (more than 60%), suggesting an area in need of more effort and commitment, given the diverse populations of the Ohio school districts.

When asked what specific strategies districts have systematically used to accommodate these special populations of gifted students, a majority of the districts who provided services (59.6%) noted tutoring as the main accommodation strategy. The other strategies employed, in descending order, included counseling (44.2%), special “bridging” programs (26.9%), use of multicultural materials (19.2%), mentoring (19.2%), discussion groups (19.2%), bibliotherapy (9.6%), and home visits (1.9%). 34.6% of the districts cited other strategies, including individual face to face instruction, weekly team meetings for intervention strategies, incorporation of IEP (individual educational plans) and WEP (written educational plans), resource rooms, and school-home team support groups (see Table 12).

Table 12: Differentiation Services for Special Populations of Gifted Students (N = 127)

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having Services Differentiated for Economically Disadvantaged or Culturally Diverse Gifted Learners</td>
<td>17.7</td>
<td>82.3</td>
</tr>
<tr>
<td>Having Services Differentiated for Twice-Exceptional Gifted Students</td>
<td>40.2</td>
<td>59.8</td>
</tr>
</tbody>
</table>

Organizational Arrangements

The participating school districts provided information on the predominant grouping patterns that they employed for at least 30% of the identified gifted students at different grade level. Grouping patterns such as cluster grouping, pull-out, and self-contained classrooms that are covered by EMIS program codes or course codes were excluded from this survey data request. Table 13 presents grouping patterns by four levels: primary, elementary, middle school, and high school. The data showed that ability-grouping in specific subjects and flexible grouping (group for subjects as needed) were relatively frequently used across the four levels, whereas cross-grade level and multi-age classrooms with gifted acceleration were less frequently adopted.

Ability-grouping in specific subjects was most frequently used at the middle school level (56.7%), followed by grades 3-5 (44.1%), high school level (35.4%), and K-2 (13.4%). Flexible grouping (group for subjects as needed) was most frequently employed at grades 3-5, followed by middle school (26%), K-2 (18.9%), and high school (12.6%). Close to a quarter of the districts (24.4%) noted that cross-grade level grouping was employed in their middle school programs, while it was much less used at the other grade levels (11-18%). The multi-age classrooms were employed by less than five percent of the school districts at any level. These data from those districts self-reporting suggested that none of the four aforementioned grouping patterns appeared to be dominantly used at any school level.
Table 13: Predominant Grouping Patterns for Gifted Services by Level (N=127)

<table>
<thead>
<tr>
<th>Pattern</th>
<th>K-2</th>
<th>3-5</th>
<th>M. S.</th>
<th>H. S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Ability-grouped in specific subjects</td>
<td>13.4</td>
<td>44.1</td>
<td>56.7</td>
<td>35.4</td>
</tr>
<tr>
<td>b. Flexible grouping (group for subjects as needed)</td>
<td>18.9</td>
<td>34.6</td>
<td>26</td>
<td>12.6</td>
</tr>
<tr>
<td>c. Cross-grade level (students advance to different grade level in specific subject area)</td>
<td>11.0</td>
<td>14.2</td>
<td>24.4</td>
<td>18.1</td>
</tr>
<tr>
<td>d. Multi-age classroom with gifted acceleration</td>
<td>3.1</td>
<td>4.7</td>
<td>3.9</td>
<td>4.7</td>
</tr>
<tr>
<td>e. Other</td>
<td>1.6</td>
<td>2.4</td>
<td>2.4</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Regarding acceleration options Ohio school districts provided, the EMIS data showed that 78.3% of the districts had a written policy addressing admission to Kindergarten; 40% of the districts statewide had a written policy on grade skipping and 30% of the districts had a written policy on content acceleration. The survey data requested additional acceleration options used in Ohio state. Close to a third of the school districts (31.5%) reported that content acceleration (single subject grade skipping) was used at the middle school level, while less than 20% of the school districts noted such policies at the other grade levels. Telescoping and cross grade grouping appeared to be used rarely in all levels of services. Testing out and International Baccalaureate were only used in a few school districts at the middle school and/or the high school level (See Table 14).

Table 14: Acceleration Options by Level (N=127)

<table>
<thead>
<tr>
<th>Option</th>
<th>K-2</th>
<th>3-5</th>
<th>M. S.</th>
<th>H. S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Telescoping (e.g., complete 2 years in one)</td>
<td>0.8</td>
<td>2.4</td>
<td>3.1</td>
<td>3.9</td>
</tr>
<tr>
<td>b. Content acceleration (single subject grade skipping)</td>
<td>9.4</td>
<td>17.3</td>
<td>31.5</td>
<td>17.3</td>
</tr>
<tr>
<td>c. Curricular compacting/content acceleration</td>
<td>13.4</td>
<td>35.4</td>
<td>36.2</td>
<td>13.4</td>
</tr>
<tr>
<td>d. Cross grade grouping</td>
<td>3.1</td>
<td>5.5</td>
<td>10.2</td>
<td>11.8</td>
</tr>
<tr>
<td>e. Testing out (credit given for entire course)</td>
<td>___</td>
<td>___</td>
<td>1.6</td>
<td>3.9</td>
</tr>
<tr>
<td>f. International Baccalaureate</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>1.6</td>
</tr>
<tr>
<td>g. Other</td>
<td>3.9</td>
<td>2.4</td>
<td>1.6</td>
<td>2.4</td>
</tr>
</tbody>
</table>

With regard to types of documents guiding districts’ K-12 services for gifted students, a slight majority of the school districts reported having gifted standards aligned with state standards (51.2%) and offering a parent/community brochure of program options (50.4%). Close to half of the districts (48.8%) noted that they had specific policies regarding objective criteria for being eligible to receive services. The other types of documents that districts had for guiding their K-12 services included, in descending order, a K-12 curriculum framework (37.8%), a

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menu of service options at each grade level for gifted learners (34.6%), a gifted strategic plan (18.9%), a scope and sequence of curriculum options for gifted learners in each subject area (15.7%), and a policy on transition points (8.7%). A few districts also reported other policy documents such as continuous improvement plans, gifted service proposals, and adopted handbooks. One district noted that they do not have services for gifted students (See Table 15).

Table 15: Type of Documents Guiding the District’s K-12 Services (N=127)

<table>
<thead>
<tr>
<th>Description</th>
<th>Freq.</th>
<th>Pct.</th>
</tr>
</thead>
<tbody>
<tr>
<td>d. Gifted standards aligned with state standards</td>
<td>65</td>
<td>51.2</td>
</tr>
<tr>
<td>h. Parent/Community brochure of program options</td>
<td>64</td>
<td>50.4</td>
</tr>
<tr>
<td>f. Policy listing objective criteria required to receive each service</td>
<td>62</td>
<td>48.8</td>
</tr>
<tr>
<td>a. A K-12 curriculum framework (goals &amp; outcomes for gifted learners)</td>
<td>48</td>
<td>37.8</td>
</tr>
<tr>
<td>c. A menu of service options at each grade level for gifted learners</td>
<td>44</td>
<td>34.6</td>
</tr>
<tr>
<td>e. Policy on continuum of services</td>
<td>39</td>
<td>30.7</td>
</tr>
<tr>
<td>i. Gifted strategic plan</td>
<td>24</td>
<td>18.9</td>
</tr>
<tr>
<td>b. A scope and sequence of curriculum options for gifted learners in each subject area</td>
<td>20</td>
<td>15.7</td>
</tr>
<tr>
<td>g. Policy on transition points (ensure continuity between grades and levels)</td>
<td>11</td>
<td>8.7</td>
</tr>
<tr>
<td>j. Other (please explain)</td>
<td>11</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Student Performance and Evaluation

This section reports the evaluation of gifted students’ performance as well as the overall gifted program evaluation. Participating school districts reported various ways being employed to evaluate their gifted program services. Analyzing student performance/achievement data (68.5%) and classroom observations conducted by building administrators (66.1%) or by gifted administrators (60%) appeared to be the more frequently used evaluative approaches. Analyzing student satisfaction data (44.9%) and administering stakeholder questionnaires (20.5% - 37.8%) were other methods employed. Other reported methods, including individual or group interviews, were less frequently used (17.3%). Only five school districts (3.9%) reported having conducted an external evaluation of their gifted programs (See Table 16).
Table 16: The district’s evaluation approaches (N=127)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Student performance/achievement data analysis</td>
<td>87</td>
<td>68.5</td>
</tr>
<tr>
<td>b. Student satisfaction data analysis</td>
<td>57</td>
<td>44.9</td>
</tr>
<tr>
<td>c. Questionnaires to constituent groups regarding perceptions of the gifted program</td>
<td>45</td>
<td>35.4</td>
</tr>
<tr>
<td>i. All teachers</td>
<td>30</td>
<td>23.6</td>
</tr>
<tr>
<td>ii. Teachers of the gifted</td>
<td>29</td>
<td>22.8</td>
</tr>
<tr>
<td>iii. Administrators</td>
<td>26</td>
<td>20.5</td>
</tr>
<tr>
<td>iv. Parents</td>
<td>48</td>
<td>37.8</td>
</tr>
<tr>
<td>d. Classroom observations by gifted administrator</td>
<td>77</td>
<td>60.6</td>
</tr>
<tr>
<td>e. Classroom observations by building administrator</td>
<td>84</td>
<td>66.1</td>
</tr>
<tr>
<td>f. Focus groups or interviews with relevant groups</td>
<td>22</td>
<td>17.3</td>
</tr>
<tr>
<td>g. External evaluation</td>
<td>5</td>
<td>3.9</td>
</tr>
<tr>
<td>h. Other (please specify)</td>
<td>10</td>
<td>7.9</td>
</tr>
</tbody>
</table>

In measuring gifted students’ performance, over three quarters of the districts (78%) cited state-required tests as the major assessment tool. Standardized assessments across grade levels (65.4%) and performance-based assessment (55.1%) were the other two assessment approaches most frequently used with gifted students. Other assessment approaches included Advanced Placement scores (38.6%), academic contests (33.9%), portfolios (31.5%), pre-post test data (27.6%), and value-added assessment (12.6%). Three school districts also noted employing other approaches such as classwork grades, transferred grades from advanced classes, and nationally normed achievement tests like ACT and SAT scores (See Table 17).
Table 17: Assessment Approaches of Gifted Student Performance (N=127)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>e. State required tests (Proficiency and/or Achievement)</td>
<td>99</td>
<td>78.0</td>
</tr>
<tr>
<td>h. Standardized assessments across grade levels</td>
<td>83</td>
<td>65.4</td>
</tr>
<tr>
<td>b. Performance-based assessment</td>
<td>70</td>
<td>55.1</td>
</tr>
<tr>
<td>g. Advanced placement scores</td>
<td>49</td>
<td>38.6</td>
</tr>
<tr>
<td>d. Academic contest comparisons to other gifted students – statewide or nationally</td>
<td>43</td>
<td>33.9</td>
</tr>
<tr>
<td>c. Portfolio assessment</td>
<td>40</td>
<td>31.5</td>
</tr>
<tr>
<td>f. Pre/Post Test data</td>
<td>35</td>
<td>27.6</td>
</tr>
<tr>
<td>i. Other</td>
<td>3</td>
<td>2.4</td>
</tr>
<tr>
<td>a. Value-added assessment</td>
<td>16</td>
<td>12.6</td>
</tr>
</tbody>
</table>

Administration/Change

Participating school districts also provided information on the powerful forces that have positively or negatively impacted gifted education services within the last several years. The top three positive forces were gifted unit funding (72.4%), gifted rules/regulations/plan (66.9%), and gifted identification money (55.9%). A minority of the school districts also cited other positive influential sources including parental demands for more or improved services (26.8%), site-based management decision making (22.8%), and political philosophy of the school district (20.5%). Other listed potential sources of influence, such as national legislation, state testing requirements, the state report card, value added assessment and technical assistance from the Ohio department of education, and state-adopted academic content standards/model lessons, were cited as positive influences by a few districts. A few districts (N=5) cited gifted personnel and consolidation of school buildings as positive forces (See Table 12).

The top three negative forces that have affected districts’ gifted education services were the No Child Left Behind legislation (62.2%), state testing requirements (60.6%), and gifted unit funding (34.6%). Political philosophy of the district (22.8%), site-based management (21.3%), and the state report card (21.3%) were also cited as negative sources of influence by some school districts. Other sources were less frequently cited as negative influences. However, 19.6% of the districts noted other negative factors reflected mainly in three dimensions: 1) lack of law or mandate to serve despite rules for identification, 2) budget cut statewide and at the local level, 3) lack of gifted services personnel, requiring one person to “do it all” (See Table 18).

These perceptual data on both positive and negative sources of influences on gifted education services in the State of Ohio suggested that gifted services-related funding and policies have had a positive impact in a majority of the school districts. However, these sources seemed to have also created barriers in some school districts (34.6%, 12.6%, respectively) in their service delivery. Based on comments some districts provided, it seemed that the budget cuts toward gifted services might have contributed to their complaints about the negative funding impact. It is clear, however, that the national No Child Left Behind Act and the accountability-driven state
testing requirements have negatively affected gifted services delivery in a majority of the school districts, with few citing the reverse.

Parental demands for more or improved services, the political philosophy of the school district, and site-based management decision making appeared to play both positive and negative roles in gifted program services, varying by school districts. The administrative climate of a particular school district might have shaped the direction of these sources of influence.

Table 18: The Top Three Positive or Negative Sources of Influences Affecting the Delivery of Gifted Education within the Last Several Years (N = 127)

<table>
<thead>
<tr>
<th></th>
<th>Positive</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Gifted rules/regulations/plan (e.g. ORC 3301-51-15)</td>
<td>85</td>
<td>66.9</td>
<td>2</td>
<td>16</td>
<td>12.6</td>
<td>8</td>
</tr>
<tr>
<td>b. Gifted unit funding</td>
<td>92</td>
<td>72.4</td>
<td>1</td>
<td>44</td>
<td>34.6</td>
<td>3</td>
</tr>
<tr>
<td>c. Gifted identification money</td>
<td>71</td>
<td>55.9</td>
<td>3</td>
<td>11</td>
<td>8.7</td>
<td>9</td>
</tr>
<tr>
<td>d. Site-based management decision making</td>
<td>29</td>
<td>22.8</td>
<td>5</td>
<td>27</td>
<td>21.3</td>
<td>5</td>
</tr>
<tr>
<td>e. National legislation (e.g. No Child Left Behind)</td>
<td>3</td>
<td>2.4</td>
<td>11</td>
<td>79</td>
<td>62.2</td>
<td>1</td>
</tr>
<tr>
<td>f. Parental demands for more or improved services</td>
<td>34</td>
<td>26.8</td>
<td>4</td>
<td>6</td>
<td>4.7</td>
<td>11</td>
</tr>
<tr>
<td>g. Political philosophy of the school district</td>
<td>26</td>
<td>20.5</td>
<td>6</td>
<td>29</td>
<td>22.8</td>
<td>4</td>
</tr>
<tr>
<td>h. State testing requirements</td>
<td>6</td>
<td>4.7</td>
<td>8</td>
<td>77</td>
<td>60.6</td>
<td>2</td>
</tr>
<tr>
<td>i. State report card</td>
<td>2</td>
<td>1.6</td>
<td>12</td>
<td>27</td>
<td>21.3</td>
<td>5</td>
</tr>
<tr>
<td>j. Value added assessment</td>
<td>4</td>
<td>3.1</td>
<td>10</td>
<td>1</td>
<td>.8</td>
<td>12</td>
</tr>
<tr>
<td>k. Technical Assistance from the Ohio Department of Education</td>
<td>2</td>
<td>1.6</td>
<td>12</td>
<td>1</td>
<td>.8</td>
<td>12</td>
</tr>
<tr>
<td>l. State-adopted Academic Content Standards/model lessons</td>
<td>12</td>
<td>9.4</td>
<td>7</td>
<td>8</td>
<td>6.3</td>
<td>10</td>
</tr>
<tr>
<td>m. Other</td>
<td>5</td>
<td>3.9</td>
<td>9</td>
<td>24</td>
<td>18.9</td>
<td>7</td>
</tr>
</tbody>
</table>

School districts were asked to provide five areas of gifted education in greatest need of attention for service improvement. The top five cited areas were funding for gifted programs (85%), professional training for general education teachers that provide gifted instruction (65.4%), expanded services to more grade levels (53.5%), beliefs and values of educators and administrators who are not trained in gifted education (44.9%), and linkage of gifted education services to both more grade levels (33.9%) and professional training related to gifted education.
for all administrative personnel (33.1%). Other areas of need included adoption of challenging/differentiated curriculum (26.8%), more teachers with licensure in gifted education (25.2%), and matching services to individual needs of students (19.7%). About 11% of the districts also cited other areas of need, with the law or state mandate of services as the most frequently articulated area to be addressed (See Table 19).

These data suggested that the greatest areas in need for service improvement in Ohio appeared to be infrastructure related, such as more funding allocation, professional training to gifted teachers, regular teachers, and administrators, the connection between gifted services and regular classroom instruction, and the value system of educators and administrators. These needs received far more outcries from participating school districts than curricular or instructional goals or outcomes. In addition, a law or state mandate of gifted education services appeared to be another area strongly voiced as a concern by some school districts.

**Table 19: Five Areas of Gifted Education in Greatest Need of Attention (N = 127)**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Funding for gifted programs</td>
<td>108</td>
</tr>
<tr>
<td>d. Professional training for general education teachers that provide gifted instruction</td>
<td>83</td>
</tr>
<tr>
<td>l. Expanded services to more grade levels</td>
<td>68</td>
</tr>
<tr>
<td>p. Beliefs and values of educators and administrators who are not trained in gifted education</td>
<td>57</td>
</tr>
<tr>
<td>o. Linkage of gifted education services to regular education initiatives</td>
<td>43</td>
</tr>
<tr>
<td>j. Professional training related to gifted education for all administrative personnel</td>
<td>42</td>
</tr>
<tr>
<td>i. Adoption of challenging and/or differentiated curriculum</td>
<td>34</td>
</tr>
<tr>
<td>h. More teachers endorsed/licensed in gifted education</td>
<td>32</td>
</tr>
<tr>
<td>c. Access to differentiated supplies/materials</td>
<td>25</td>
</tr>
<tr>
<td>m. Matching the services delivered to the individual needs of the child</td>
<td>25</td>
</tr>
<tr>
<td>f. Assessing academic growth in students</td>
<td>22</td>
</tr>
<tr>
<td>n. Need for a curriculum for gifted learners</td>
<td>17</td>
</tr>
<tr>
<td>q. Other</td>
<td>14</td>
</tr>
<tr>
<td>e. An identified individual in the administrative leadership of the school system in charge of the local gifted program</td>
<td>9</td>
</tr>
<tr>
<td>a. Representation of culturally diverse and/or economically disadvantaged students in the gifted program</td>
<td>8</td>
</tr>
<tr>
<td>k. Off-level testing to assess gifted students’ academic growth</td>
<td>8</td>
</tr>
</tbody>
</table>
Written Comments

Some school districts (N=33) provided additional comments or concerns in related to providing a continuum of services for gifted learners. These comments can be summarized in the following areas of concern: 1) Gifted program services should be mandated and funded. Ten school districts (30.3%) provided comments on the gifted services mandates. They felt a need for state mandates for services to match mandates for identification. One participant stated, “If the state is going to mandate that we test and identify, then services should also be mandated with funding provided.” Another noted that “There is not enough staff, money, or inclination to serve gifted students K-12, because services are NOT mandated. Many identified students are not served or are underserved due to lack of state requirements to serve gifted students. 2) Desire for more funding. Many school districts discussed the lack of sufficient funding from the state and total lack of local funds. Without the state funding, gifted program services in many school districts would be non-existent. However, the current funding appeared to be very limited. As one noted, “Because funds are so severely limited in my district, we do not have the ability to hire more staff to teach.” 3) Hope for on-going professional development training for all parties. Several school districts articulated a need for “comprehensive and ongoing staff development” about gifted needs and ways to meet to those needs. There seemed to be a lack of personnel who had had needed training.

Summary

The survey data showed that in the area of curriculum and instruction/differentiation, there was a consistent pattern of goal emphases across school levels, despite a varying degree of employment. These goals included enrichment and expansion of the core curriculum, development of abstract and higher order thinking skills, encouragement of self-understanding, and focus on research skills. The differences across school levels lay in the different degree of usage, with the percentage of employment declining with school level.

Findings showed that, statewide, the type of curricula mainly used in the elementary and middle school districts were similar. However, high percentages of the school districts reported more usage of these curricula in their elementary schools, than at the middle school level. These curricula included teacher developed curriculum, materials on critical and creative thinking skills development, and materials on self-understanding and social-emotional issues. The high school curricular option was most distinctive in using AP or IB curriculum mainly for high ability learners. The use of teacher-developed curriculum units of study, thinking skills materials, social-emotional discussion materials, and packaged curricula appeared to decline as the level went up, whereas the use of technology and advanced textbooks seemed to increase with school level.

In the area of organizational arrangement, the four types of grouping, namely, ability-grouped in specific subjects, flexible grouping (by subjects as needed), cross-grade level and multiage classroom with gifted acceleration, appeared to vary in use by grade levels, with middle school level employing grouping relatively more frequently than the other levels did. The data showed that none of the four grouping models were dominantly used for gifted services in the Ohio school districts.
Regarding acceleration options, content acceleration (single subject grade skipping) was more frequently employed at the middle school level than at grades K-5 and the high school level. Telescoping, cross-grade grouping, testing out, and International Baccalaureate were rarely used at any school level in Ohio school districts. These data suggested a statewide lack of a wide range of acceleration options for gifted students at different school levels.

With respect to documents guiding districts’ K-12 services, about half of the school districts made available documents discussing gifted standards’ alignment with state standards, program information and options for parents and community, and delineation of specific criteria for identification and selection. Other types of documents, such as a K-12 curriculum framework, services options by grade level, gifted strategic plan, and scope and sequence of curriculum options by subject areas, were available in a third or fewer of the Ohio school districts.

In the area of student performance and evaluation, the major sources used for evaluating programs were students’ learning outcome, classroom observations, and stakeholder questionnaires. State-required tests and other standardized assessments were the dominant approaches for assessment of gifted students’ performance. More than half of the school districts, however, adopted performance-based assessment as another tool. About a third of the school districts used Advanced Placement scores, academic competitions, portfolios, and pre-post data to measure gifted students’ performance.

Perceptual data on positive and negative sources of influence on gifted education services in the State of Ohio suggested that gifted services-related funding and policies have had a positive impact in a majority of the school districts. However, these sources seemed to have also created barriers in a minority of the school districts (34.6%, 12.6%, respectively). Based on some districts’ comments, it seemed that the budget cut in gifted services might have contributed to some districts’ complaints about funding. National regulations such as the No Child Left Behind Act and the accountability-driven state testing requirements were reported to have negatively affected gifted services delivery in a majority of the school districts, with few citing the reverse.

Moreover, parental demands for more or improved services, the political philosophy of the school district, and site-based management decision making appeared to have both positive and negative impact on gifted program services, varying by school district. The administrative climate of a particular school district might have shaped the direction of these sources of influence.

Data on suggestions for areas of change suggested that the greatest areas in need of service improvement in Ohio appeared to be infrastructure related, including more funding allocation, professional training of teachers and administrators, the connection between gifted services and regular classroom instruction, and the value system of educators and administrators. These needs received far more attention from participating school districts than curricular or instructional goals or outcomes. In addition, a law or state mandate of gifted education services appeared to be another concern strongly voiced by some school districts.
Section V

Toolkit and Resources

By Bess Worley II
Section V: Toolkit and Resources

Ohio Comprehensive Continuum of Services Project
District Toolkit
Framework for Toolkit Organization

This framework describes the placement models and instructional strategies addressed in the District Toolkit. The toolkit contains a section for each model based on the 2004-2005 Self-Report categories and the literature for gifted education curriculum and program models. Each section contains a description of the model addressed, annotated literature and research-based references, an annotated reference list of practice-based resources and other practice-based materials, and suggestions for staff expertise and training necessary to implement the model.

Glossary of Toolkit Terms
Placement/Service: The definitions for this category of the toolkit is based on the 2004-2005 Ohio Department of Education Self-Report form, Section B, and other categories drawn from the literature on gifted education.

References for Support (Literature): Literature/theory-based references are based on theories, philosophical reasoning, or persuasive arguments for a particular approach or theory. These references include position papers, policy analyses, and descriptive reviews of the literature.

Research References/Effectiveness: Research-based references are based on peer-reviewed studies that use appropriate research methodologies to address questions of cause and effect, relationships, perceptions, etc. Measures of Effect Size are included when they are reported in the research study or meta-analysis of research studies. An Effect Size (ES) greater than 0.60 is considered to be High, between 0.30 and 0.60 is considered to be Medium, and an Effect Size less than 0.30 is considered to be Low. The measure of Effect Size is usually defined as the difference in mean outcomes of the treatment and control group divided by the standard deviation of the outcomes of the control group.

Practice-Based Resources and Materials: Practice-based resources are drawn from a number of sources, including small-scale studies, descriptions of programs, professional wisdom, and action research of particular teachers or programs. Practice-based materials include manuals and guidelines for specific programs or approaches.

Level of Cost/Efficiency: The level of Cost/Efficiency is determined based on the requirements of a particular model or strategy in terms of the professional development services and materials required for full implementation.

Staff Expertise: Staff expertise describes the types of knowledge and skills required of the various staff members who participate in the model or that use the instructional strategy described.
Ohio Comprehensive Continuum of Services Project
Descriptions of Placement and Service Models and Descriptions of Instructional Strategies

Part I: Descriptions of Placement and Service Models

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Advanced Placement (AP) course
Post Secondary Enrollment Option course
Honors Class
Educational Option (includes independent study)
Guidance Services
Magnet School
Other: Early Entrance to College
Other: Mentorship
Other: International Baccalaureate
Other: William and Mary Curriculum (advanced content model for grades 1-11)
### Overview of Placement and Service Models

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| **Resource/pull-out room** | • Cohen, Duncan, & Cohen, 1994  
• Dai & Feldhusen, 1999  
• Feldhusen, 1995  
• Feldhusen & Kolloff, 1988  
• Feldhusen & Reilly, 1983  
• Paul, Elder, & Bartell, 1997  
• Renzulli, 2000  
• Renzulli, 2001  
• Renzulli & Reis, 1994 | • Clements et al., 2000  
• Feldhusen et al., 1990  
• Kolloff & Feldhusen, 1984  
• Landau, Weissler, & Golod, 2001  
• Moon, 1995  
• Moon & Feldhusen, 1993  
• Moon, Feldhusen, & Dillon, 1994  
• Renzulli & Reis, 1994  
• Roberts, Ingram, & Harris 1992  
• Rogers, 1998: Pull-out programs, when a direct extension of regular curriculum: ES = .65 | • Center for Gifted Education, 1997-2005  
• Center for Gifted Education, 2000  
• Elder & Paul, 1998  
• Gibson & Efinger, 2001  
• Johnson, 2001  
• Purcell & Renzulli, 1995  
• Renzulli, Gentry, & Reis, 2003  
• Renzulli & Reis, 1997  
• Renzulli & Reis, 2003  
• VanTassel-Baska, 2003 | Medium | General Education Teacher:  
- characteristics and needs of gifted learners  
- curriculum compacting, differentiation  
- training in collaborating with other classroom teachers  
Gifted Intervention Specialist:  
- characteristics and needs of gifted learners  
- creating and adapting curriculum for high ability learners  
- various enrichment and acceleration strategies  
- training in collaborating with classroom teachers |
| **Self-contained gifted classroom – all subjects** | • Feldhusen & Nimlos-Hippen, 1992  
• Field, Bernal, & Goertz, 2001  
• Hishinuma & Nishimura, 2000 | • Adams-Byers, Whitsell, & Moon, 2004  
• Hoge & McSheffrey, 1990  
• Karnes, Chauvin,  
• Johnson, 2001  
• Mirsky, 1984  
• Rosselli, 1996  
• Steele, 1991  
• Weinfeld, Barnes-Robinson, Jeweler, & Shevitz, 2002 | • Johnson, 2001  
• Mirsky, 1984  
• Rosselli, 1996  
• Steele, 1991  
• Weinfeld, Barnes-Robinson, Jeweler, & Shevitz, 2002 | Low | General Education Teacher:  
- characteristics and needs of gifted learners  
- curriculum compacting, differentiation  
- creating and adapting curriculum |
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<tr>
<th>Setting</th>
<th>Examples</th>
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| Self-contained gifted classroom – subject specific | • Lubinski & Benbow, 1995  
• Swiatek, 2002  
• Adams-Byers, WhitSELL, & Moon, 2004  
• Field, Bernal, & Goertz, 2001  
• JohnSon, Boyce, & VanTassEll-Baska, 1995  
• Karnes, Chauvin, & Trant, 1985  
• Kulik & Kulik, 1992  
• Rogers, 1991 | • Halstead, 2002  
• Rosselli, 1996 | Low         |
| Regular Classroom – no grouping | • Tomlinson, 1995, 2000, 2001  
• Westberg & Daust, 1994  
• Adams-Byers, WhitSELL, & Moon, 2004  
• Kulik & Kulik, 1992  
• Reis, Gentry, & Park, 1995  
• Reis & Westberg,  
• Johnson, 2001  
• National Association for Gifted Children, 1998 | • Johnson, 2001  
• National Association for Gifted Children, 1998 | High        |
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<th>Regular Classroom with cluster grouping</th>
<th>1994</th>
<th>1994</th>
<th>Medium</th>
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<td>• Bernal, 2003</td>
<td>• Rogers, 1998: ES = 0</td>
<td>• Coleman, 1995</td>
<td>- training in collaborating with other classroom teachers</td>
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<tr>
<td>• Tomlinson, 2000</td>
<td>• Sanders &amp; Horn, 1998</td>
<td>• Dexter, 1998</td>
<td>Gifted Intervention Specialist:</td>
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<td></td>
<td>• A. Slavin, 1988, 1990, 1993</td>
<td>• Johnson, 2001</td>
<td>- characteristics and needs of gifted learners</td>
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<tr>
<td></td>
<td></td>
<td>• Kennedy, 1995</td>
<td>- various differentiation strategies</td>
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<tr>
<td></td>
<td></td>
<td>• Landrum, 2003</td>
<td>- adapting curriculum for high ability learners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Teno, 2000</td>
<td>- training in collaborating with classroom teachers</td>
</tr>
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<td></td>
<td></td>
<td>• Winebrenner &amp; Devlin, 2001</td>
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<td>Regular Classroom with whole grade acceleration</td>
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<td>1994</td>
<td>Low</td>
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<tr>
<td>• Colangelo, Assouline, &amp; Gross, 2004</td>
<td>• Rimm &amp; Lovance, 1992</td>
<td>• Kettler &amp; Curliss, 2003</td>
<td>- initial and ongoing training</td>
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<tr>
<td>• Johnsen, 2005</td>
<td>• Rogers, 1998: Academic ES = .49; Social ES = .31; Self-Esteem ES = .16</td>
<td>• VanTassel-Baska, 2004</td>
<td>- characteristics and needs of gifted learners</td>
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<tr>
<td>• Southern &amp; Jones, 1991</td>
<td></td>
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<td>- various differentiation strategies</td>
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<tr>
<td>• Swiatek, 2000</td>
<td></td>
<td></td>
<td>- creating and adapting curriculum for high ability learners</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- training in collaborating with classroom teachers</td>
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<tr>
<td><strong>Regular Classroom with single subject acceleration</strong></td>
<td><strong>Gifted Intervention Specialist:</strong></td>
<td><strong>Regular Classroom with early entrance to Kindergarten</strong></td>
<td><strong>Gifted Intervention Specialist:</strong></td>
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| • Colangelo, Assouline, & Gross, 2004  
• Johnsen, 2005  
• Southern & Jones, 1991  
• Swiatek, 2000  
• Rimm & Lovance, 1992  
• Rogers, 1998: ES = .57 in math and science; Elementary ES = .79 (with differentiation); When the pacing is also accelerated in math and science, ES = .57  
• Halstead, 2002  
• VanTassel-Baska, 2004 | - social-emotional needs of students who have been accelerated  
- creating and adapting curriculum for high ability learners  
- training in collaborating with classroom teachers with students accelerated by a whole grade | • Braymen & Piersel, 1987  
• Mantzicopoulos, 2000  
• Southern & Jones, 1991  
• Rimm & Lovance, 1992  
• Guenther, 1998  
• VanTassel-Baska, 2004 | - social-emotional needs of students who have been accelerated  
- creating and adapting curriculum for high ability learners  
- training in collaborating with classroom teachers with students accelerated by in a specific content area  
- characteristics and needs of gifted learners  
- a variety of differentiation strategies for curriculum and instruction  
- adapting curriculum for high ability learners  
- social-emotional needs of students who have been accelerated  
- characteristics and needs of gifted learners  
- a variety of differentiation strategies for curriculum and instruction  
- adapting curriculum for high ability learners  
- social-emotional needs of students who have been enrolled in kindergarten early |

- **Medium** General Education Teacher:  
- characteristics and needs of gifted learners  
- a variety of differentiation strategies for curriculum and instruction  
- adapting curriculum for high ability learners  
- social-emotional needs of students who have been accelerated  
- characteristics and needs of gifted learners  
- a variety of differentiation strategies for curriculum and instruction  
- adapting curriculum for high ability learners  
- social-emotional needs of students who have been enrolled in kindergarten early
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<th>Advanced Placement (AP) course</th>
<th>Curry, MacDonald, &amp; Morgan, 1999</th>
<th>Herr, 1993</th>
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<th>General Education Teacher: - characteristics and needs of gifted learners - College Board content area training in the Advanced Placement curriculum - a variety of differentiation strategies for curriculum and instruction - adapting curriculum for high ability learners</th>
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<tbody>
<tr>
<td>Post Secondary Enrollment Option course</td>
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<td>Rimm &amp; Lovance, 1992</td>
<td>Myers, 1993</td>
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<td>College Faculty - characteristics and needs of gifted learners - a variety of differentiation strategies for curriculum and instruction - adapting curriculum for high ability learners</td>
</tr>
<tr>
<td>Honors Class</td>
<td>Feldhusen &amp; Kennedy, 1989</td>
<td>Herr, 1993</td>
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<td>Low</td>
<td>General Education Teacher: - characteristics and needs of gifted learners - a variety of differentiation strategies for curriculum and instruction - adapting curriculum for high ability learners</td>
</tr>
<tr>
<td>Educational Option (includes independent study)</td>
<td>Gagne, 1995</td>
<td>Hertzog, 1995</td>
<td>Betts &amp; Neihart, 1986</td>
<td>Low</td>
<td>General Education Teacher/Gifted Intervention Specialist/Gifted Coordinator General Education Teacher: - characteristics and needs of gifted learners - a variety of differentiation strategies for curriculum and instruction</td>
</tr>
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</table>

- creating and adapting curriculum for high ability learners
- training in collaborating with classroom teachers with students enrolled in kindergarten early
- characteristics and needs of gifted learners
- College Board content area training in the Advanced Placement curriculum
- a variety of differentiation strategies for curriculum and instruction
- adapting curriculum for high ability learners
- characteristics and needs of gifted learners
- a variety of differentiation strategies for curriculum and instruction
- adapting curriculum for high ability learners
- characteristics and needs of gifted learners
- a variety of differentiation strategies for curriculum and instruction
- adapting curriculum for high ability learners
- characteristics and needs of gifted learners
- a variety of differentiation strategies for curriculum and instruction
- adapting curriculum for high ability learners
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<th><strong>Guidance Services</strong></th>
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<th>Medium</th>
<th>School Counselor and/or Psychologist</th>
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<tr>
<th><strong>Magnet School</strong></th>
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<th>High</th>
<th>General Education Teacher:</th>
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<td>Adcock &amp; Phillips, 2000&lt;br&gt; Daniel, 2000</td>
<td>- Beer, 1989&lt;br&gt;- Cross &amp; Coleman, 2000&lt;br&gt;- Gentry, Rizza, &amp; Owen, 2002&lt;br&gt;- Plucker, Cobb, &amp; Quaglia, 1996&lt;br&gt;- Cohen, 1997&lt;br&gt;- Collins, 1996&lt;br&gt;- Juntune, 1999&lt;br&gt;- Kay, 2002</td>
<td>- characteristics and needs of gifted learners&lt;br&gt;- differentiation strategies for curriculum and instruction&lt;br&gt;- creating and adapting curriculum for high ability learners in core academic and focus areas&lt;br&gt;- training in collaborating with other classroom teachers&lt;br&gt;- characteristics and needs of gifted learners&lt;br&gt;- differentiation strategies for curriculum and instruction within the Arts&lt;br&gt;- creating and adapting curriculum for high ability learners in the Arts&lt;br&gt;- training in collaborating with other teachers&lt;br&gt;- characteristics and needs of gifted learners</td>
<td></td>
</tr>
</tbody>
</table>
learners
- differentiation strategies for curriculum and instruction within the appropriate focus area
- creating and adapting curriculum for high ability learners in the appropriate focus area
- training in collaborating with other teachers

Gifted Intervention Specialist:
- characteristics and needs of gifted learners
- support and resources for educators working with the magnet school program
- training in collaborating with other teachers

Gifted Coordinator
- support and resources for educators working with the magnet school program
- training in collaborating with other teachers

Other: Early Entrance to College

|--------------------------------|-----------------------|--------------------------------------|---------------------|-------------------------------------------------|------------|---------------------|-----|
| Low                           | General Education Teacher: | - characteristics and needs of gifted learners
|                               | - a variety of differentiation strategies for curriculum and instruction
|                               | - adapting curriculum for high ability learners in preparation for an early entrance to post-secondary study
|                               | Gifted Intervention Specialist/Gifted Coordinator: | - support and resources for educators working with an early
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<th>Other: Mentorship</th>
<th>Entrance to postsecondary student</th>
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<td>• Feldhusen &amp; Pleiss, 1994</td>
<td>- training in collaborating with teachers, college faculty, and early entrance program administrators</td>
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<td>• Goh &amp; Goh, 1996</td>
<td>College Faculty</td>
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<td>• Ambrose, Allen, &amp; Huntley, 1994</td>
<td>- characteristics and needs of gifted learners</td>
</tr>
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<td>• Beck, 1989</td>
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<td>• Davalos &amp; Haensly, 1997</td>
<td>- adapting curriculum for high ability learners</td>
</tr>
<tr>
<td>• Hébert &amp; Olenchak, 2000</td>
<td>- supportive of students’ social-emotional needs within an early entrance program</td>
</tr>
<tr>
<td>• Rogers, 1998: Academic ES = .57; Social ES = .47; Self-esteem ES = .42</td>
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<tr>
<td>• Chan, 2000</td>
<td>Other: Early Entrance Program Administrators:</td>
</tr>
<tr>
<td>• Goh, 1993</td>
<td>- designing and developing a program to help early entrants make a successful transition to the post-secondary environment, including flexibility to meet individual needs</td>
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<tr>
<td>• Prillaman &amp; Richardson, 1989</td>
<td>- training to identify and provide support for early entrants’ social-emotional needs</td>
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<tr>
<td>• Subotnik, 2003</td>
<td>Mentor:</td>
</tr>
<tr>
<td>• Troxclair, 2000</td>
<td>- characteristics and needs of gifted learners</td>
</tr>
<tr>
<td>• Electronic Emissary <a href="http://emissary.wm.edu/">http://emissary.wm.edu/</a></td>
<td>- serve as a liaison between mentor and student (mentee)</td>
</tr>
<tr>
<td>• UConn Mentor Connection</td>
<td>- serve as an advocate for mentee</td>
</tr>
<tr>
<td>Low</td>
<td>- collaborate with mentor and student in designing mentorship experience.</td>
</tr>
<tr>
<td>Gifted Intervention Specialist/Gifted Coordinator</td>
<td>Mentor:</td>
</tr>
<tr>
<td>• serve as a liaison between mentor and student (mentee)</td>
<td></td>
</tr>
<tr>
<td>• serve as an advocate for mentee</td>
<td>- fulfill obligations as a mentor</td>
</tr>
<tr>
<td>• collaborate with mentor and student in designing mentorship experience.</td>
<td></td>
</tr>
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</table>
### Other: International Baccalaureate

- Cox & Daniel, 1983
- Nugent & Karnes, 2002
- Poelzer & Feldhusen, 1997
- VanTassel-Baska, 2001

- IB organization materials
- Tookey, 1999

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<tr>
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<th>General Education Teacher:</th>
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<td>- a variety of differentiation strategies for curriculum and instruction</td>
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<tr>
<td></td>
<td>- adapting curriculum for high ability learners</td>
</tr>
</tbody>
</table>

**Gifted Intervention Specialist/Gifted Coordinator**

- serve as a liaison to the coordinator of the IB program
- serve as an advocate for the gifted learner within the IB program
- collaborate with other professionals

### Other: William and Mary Curriculum for High Ability Learners

(advanced content model for grades 1-11)

- Boyce, VanTassel-Baska, Burruss, Sher, & Johnson, (1997)
- VanTassel-Baska, 1986
- VanTassel-Baska & Little, 2003

- Johnson, Boyce, & VanTassel-Baska, 1995
- Ries & Bass, 1997
- VanTassel-Baska, 1998
- VanTassel-Baska, Avery, Little, & Hughes, 2000
- VanTassel-Baska, Bass, Ries, Poland, & Avery, 1998
- VanTassel-Baska, Johnson, Hughes, & Boyce, 1996
- VanTassel-Baska, Zuo, Avery, & Little,

- Center for Gifted Education, 1997-2005
- Gallagher, Stepies, Sher, & Workman, 1995
- Johnson, Poland, & Brown, 1998
- Sher et al., 1992
- VanTassel-Baska, 1994
- VanTassel-Baska, 2003

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<td>- training in the William and Mary curriculum</td>
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<tr>
<td>- a variety of differentiation strategies for curriculum and instruction</td>
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<tr>
<td>- adapting curriculum for high ability learners</td>
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**Gifted Intervention Specialist:**

- training in the William and Mary curriculum
- knowledge of the William and Mary curriculum relationship with district curriculum framework

http://www.gifted.uconn.edu/mentoruc.html
| 2002 | [cell content] | - collaborate with professionals to differentiate for gifted learners |
Placement and Service Models
Resource/Pull-out room

Description

Resource/Pull-Out Room for Gifted Students led by Gifted Intervention Specialist (GIS):
Students are regularly assigned (but less than 100% of time) to a resource room for gifted students instead of their regular classroom. The instruction is differentiated and delivered by a gifted intervention specialist. (p. 13)

Pull-out or resource room services consist of identified gifted students being pulled-out of the regular classroom for a specified period of time each week, typically ranging from one hour per week to one day per week. The experiences provided for students receiving services in a pull-out model vary in structure and approach to curriculum and instruction.

Suggestions for Staff Expertise and Training

General Education Teacher

Students who are pulled from their regular classroom for gifted program services also need services throughout the remaining instructional time. All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers also need to be able to differentiate curriculum and instruction for gifted learners in addition to their pull-out instructional time. These teachers need initial and ongoing support to incorporate curriculum compacting strategies that allow gifted learners to move at an appropriate instructional pace within the general classroom setting. General Education teachers also need and training to effectively collaborate with Gifted Intervention Specialists to provide appropriate services for gifted learners throughout the school day.

Gifted Intervention Specialist

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. Gifted Intervention Specialists should also receive training in appropriate enrichment and acceleration strategies, creating and adapting curriculum for high ability learners, and in collaborating with classroom teachers to provide appropriate services for gifted learners throughout the school day.

Level of Cost/Efficiency

Based on cost and efficiency requirements for training and materials, the Resource/Pull-out room service model is rated Medium.

Literature and Research-based References


Abstract [ERIC]: Studies fourth grade students identified by their teachers as having 'above average ability' in mathematics who were participating in 'pull out' enrichment sessions. Indicates that these students did not show initial difficulties with turn commands previously reported in mixed populations, and they created strategies to determine the correct direction of turn and estimate the amount of turn.

Abstract [ERIC]: Evaluation of peer relations of 53 intermediate grade students participating in a pull-out enrichment program found that these children, relative to classmates, were evaluated positively by peers, demonstrated greater awareness of reciprocity in friendship relationships, and were perceived less often as either an aggressor or victim of aggression.


Abstract [ERIC]: A study involving 96 gifted adolescents examined internal and external validity of the Thinking Styles Inventory (TSI) within the framework of Sternberg's (1988) theory of mental self-government. Results provided evidence of the external discriminant validity but lent only partial support to the internal validity of the instrument.


Abstract [ERIC]: This review of the literature examines three aspects of creative thinking and production: (1) metacognitive processing; (2) the knowledge base; and (3) personality variables. It is concluded that all three are essential elements, they operate interactively, and the results of creative thinking and problem solving are best assessed through evaluation of the products.


Abstract [ERIC]: The reprinted 1978 article with a 1988 update advocates a combination of enrichment and acceleration to meet the needs of gifted youth. It presents a three-stage enrichment model to develop: (1) divergent and convergent thinking abilities; (2) creative thinking and problem solving strategies; and (3) independent learning abilities.


Abstract [ERIC]: A model for educating gifted secondary students combines acceleration and enrichment opportunities with counseling to match services with students' needs and abilities. Additional components of the model include advanced placement classes, honors classes, seminars, career education, math-science acceleration, the arts, extra school instruction, cultural experiences, foreign languages, and vocational programs.


Abstract [ERIC]: Sixty children in grades 3 to 8 were evaluated for self-concept changes after participation in a creative enrichment, pullout program for the gifted. Results showed positive gains on 2 self-concept scales for children in grades 3 to 6 and on 1 of 2 self-concept scales for grades 7 and 8. (Author)


Abstract [ERIC]: An enrichment program based on the Purdue Three-Stage Model (creative thinking abilities, creative problem solving, and independent study and research skills) resulted in no significant differences in self-concept scores for 199 gifted elementary participants.
compared to control. Participants did, however, show significant differences in creative thinking variables.


Abstract [ERIC]: A study examined the impact of a gifted enrichment program on 80 Israeli students (grades 4-8) from disadvantaged neighborhoods. After program participation, girls' performance on an intelligence test was higher than boys'. While girls started out with slightly lower scores, they ended up with slightly higher scores than boys.


Abstract [ERIC]: The effects of a pull-out enrichment program (Purdue Three-Stage Model) on 10 families of participating students were explored in this retrospective study. Subjects were high school seniors (and their families) who had participated in the program during elementary school. In most cases, the program had a positive influence on both family relationships and home-school relationships.


Abstract [ERIC]: Follow-up at the end of high school of 23 students identified as gifted in the second grade found that 87% had demonstrated average to high levels of accomplishment, that all intended to earn a college degree and pursue a career, and that far more females than males considered marriage in describing personal goals. (DB)


Based on student and parent questionnaires and school data, the Purdue Three-Stage Model of enrichment was examined. Students preferred to work on personally-generated studies based on their areas of interest instead of teacher assigned ones. The three stages of the model include a focus on divergent and convergent thinking, development in creative problem solving, and an application of research skills and independent study skills.


This report examines a study on the extent to which California's teacher preparation programs were preparing candidates for teaching critical thinking and problem-solving skills in elementary and secondary schools. Researchers conducted interviews with education and subject matter faculty in private and public colleges and universities. Results indicated that few faculty members in teacher preparation had in-depth exposure to research on the concept, and most had only a vague understanding of what critical thinking was and what was involved in bringing it successfully into instruction. Follow-up interviews with participants who had strong responses asked about classroom teaching practices and found that this group (with initially strong
responses) had some depth of understanding. Interviews with faculty members who had undergone professional development on critical thinking found that these faculty members were better able to give detailed and plausible accounts of how they approached critical thinking in the classroom. Selections from work turned in at a Critical Thinking workshop for postsecondary faculty members are included. The report presents five policy recommendations that address information dissemination, postsecondary faculty professional development, accreditation standards focused on critical thinking, career-long preparation and reinforcement, and candidate accountability in performance examinations.

Abstract [ERIC]: Discusses the rationale for Academy of Inquiry and Talent Development enrichment projects in middle schools and provides examples of the activities pursued in these projects. Considers the authentic-learning and real-life problem-solving objectives of the projects, their organization, and the three types of enrichment: general exploratory, group training, and individual and small group investigations.

Abstract [ERIC]: Details the middle school implementation of an Academies of Inquiry and Talent Development enrichment program involving authentic-learning and real-life problem solving objectives. Considers start-up issues of orientation for students and parents, as well as teacher planning. Also considers issues of maintaining high standards, finding time for the program, exploring alternative models, maintaining flexibility, and overcoming organizational inertia.

Abstract: This article reviews research on the Schoolwide Enrichment Triad Model, which combines the previously developed Enrichment Triad and Revolving Door Identification Models of gifted education. Research reviewed addresses: model effectiveness, creative productivity, personal and social development, underserved populations, self-efficacy, curricular framework, learning styles, and longitudinal studies.

Abstract [ERIC]: Evaluation of a schoolwide enrichment and resource room enrichment program on problem solving/problem finding for gifted children in grades 3-5 found that the gifted students involved made significantly greater gains than did average ability students receiving the special treatment and significantly greater gains than did gifted students receiving no special treatment.

Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.

Practice-based Resources and Materials

Center for Gifted Education. (1997-2005). William and Mary curriculum for high ability learners

Language Arts

- Beyond Words
- Journeys and Destinations
- Literary Reflections
- Patterns of Change
- Autobiographies
- Persuasion
- The 1940s: A Decade of Change
- Utopia
- Threads of Change in 19th Century American Literature

Social Studies

- Ancient Egypt: Gift of the Nile
- Ancient China: The Middle Kingdom
- Building a New System: Colonial America 1607-1763
- The World Turned Upside Down: The American Revolution
- A House Divided?: The Civil War, Its Causes and Effects
- The 1920s in America: A Decade of Tensions
- The 1930s in America: Facing Depression
- The Road to the White House: Electing the American President
- The Renaissance and Reformation in Europe

Science

- Dust Bowl
- What a Find
- Acid, Acid Everywhere
- Electricity City
- Hot Rods
- No Quick Fix

Center for Gifted Education. (2000). Center for Gifted Education research model. Williamsburg, VA: College of William and Mary, Author.

This research model is based on Paul’s Reasoning Model and provides step-by-step questions to assist students with conducting real-world research through question posing, data collection, interpretation, product creation and determination of implications and consequences based on the data.
Abstract [ERIC]: Argues that questions are essential to thought, that thinking is driven by questions, and that answers often signal a full stop in thought. Outlines the art of Socratic questioning, and describes how to construct a list of “prior questions” (questions presupposed by another question). Offers a sample Socratic dialog in a high school biology class.

Abstract [ERIC]: This article provides a consistent framework through which educators may better identify and serve gifted and talented students by revisiting the dynamics of the Schoolwide Enrichment Model (SEM) in relation to student achievement. Delivery and structural and organizational components of SEM are discussed, along with research supporting the model.

Gifted students and their affective needs are outlined in this article, including a rationale for why affective needs should be met in the regular curriculum. The article concludes with ideas for service learning projects, in particular, that channel the affect and cognitive needs of gifted students into productive learning options.

Abstract [ERIC]: Describes the Schoolwide Enrichment Model, a systematic set of strategies for increasing student effort, enjoyment, and creative productivity. Explains the Total Talent Portfolio, a model component and vehicle for systematically gathering, recording, and acting on information about students' abilities, interests, and learning styles. Illustrates the Portfolio's use with a case study of a 10th grader.

Abstract [ERIC]: This guidebook provides a rationale and guidelines for implementing a student-driven learning approach using enrichment clusters. Enrichment clusters allow students who share a common interest to meet each week to produce a product, performance, or targeted service based on that common interest. Chapter 1 discusses different models of learning. Chapter 2 defines enrichment clusters. Guidelines for enrichment clusters are provided and include: (1) focus on application of content and process; (2) allow students and teachers to select the clusters in which they wish to participate; (3) group students across grades by interest areas; (4) do not use predetermined unit or lesson plans; (5) guide clusters with the authentic methods and advanced content and materials that investigators and creative professionals use; (6) provide opportunities to develop multiple talents within an enrichment cluster through division of labor; (7) set aside designated time blocks for enrichment clusters; and (8) suspend the customs of regular schooling. Chapter 3 describes seven steps to implementing an enrichment cluster program. Chapter 4 provides guidelines for developing an enrichment cluster. Chapter 5
addresses staff development and program evaluation. Chapter 6 discusses research underlying the enrichment cluster program. Extensive appendices include surveys and planning forms.


Abstract [ERIC]: This book provides a detailed guide to implementing the Schoolwide Enrichment Model (SEM), a research-supported model originating in special programs for gifted and talented students but not extended to school improvement across the full range of school types, levels, and demographic differences. Individual chapters address the following topics: (1) the Schoolwide Enrichment Model and educational reform; (2) using the SEM as a plan for school improvement; (3) implementing the SEM, a six-stage planning process for consensus building and development of a mission statement; (4) identifying students for participation in the SEM; (5) the Total Talent Portfolio (assessing strengths, interests and talents of all students); (6) curriculum compacting (a systematic procedure for modifying the curriculum for above average ability students); (7) Type I enrichment (general exploratory experiences); (8) Type II enrichment (group training activities); (9) Type III enrichment (individual and small group investigations of real problems); (10) enrichment teaching and learning (enrichment clusters). A concluding section addresses aspects of developing a 5-year plan. Appendices include action forms and a sample total talent portfolio.


This chapter outlines the research evidence and “how-to” applications of the Schoolwide Enrichment Model, including how students may explore and research areas of interest after compacting out of content already known. Research-based evidence using Type I, II, and III investigations is documented within the chapter citing achievement gains, life production, and positive student attitudes toward self and school.


This book provides practical applications regarding how to write and plan curriculum and instruction using standards-based instruction aligned with gifted programming. Scope and sequence development, curriculum planning, instructional delivery modes, and approaches for modifying standards are included using a planning model and an instructional model. The planning model acknowledges the important roles of curriculum planners, of task analysis, and of the educational climate of a school. The instructional model emphasizes the characteristics of gifted learners, philosophy and goals, student goals, learner outcomes, and classroom implementation.
Self-contained Gifted Classroom – All Subjects

Description
Gifted students are specifically placed in one class for full-time services with a teacher who has received professional development in differentiating curriculum and instruction for gifted learners. All core content-areas are addressed in this arrangement with non-core areas (i.e., physical education, art, music) addressed by specialists in those areas.

Suggestions for Staff Expertise and Training

General Education Teacher
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers with a self-contained classroom of gifted learners need to be able to differentiate curriculum and instruction for gifted learners throughout the school day. These teachers need initial and ongoing support to incorporate curriculum compacting strategies that allow gifted learners to move at an appropriate instructional pace within the self-contained classroom setting, as well as other instructional strategies appropriate for differentiating curriculum and instruction for gifted learners. General Education teachers also need and training to effectively collaborate with Gifted Intervention Specialists and other General Education teachers with self-contained classrooms to create and adapt curriculum for high ability learners.

Gifted Intervention Specialist
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. Gifted Intervention Specialists should also receive training in creating and adapting curriculum for high ability learners and in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners within self-contained classroom settings.

Level of Cost/Efficiency
Based on cost and efficiency requirements for training and materials, limited to teachers with a self-contained classroom of gifted learners, the self-contained gifted classroom setting is rated Low.

Literature and Research-based References

This study investigated student perceptions of differences in academic and social effects that occur when gifted and talented youth are grouped homogeneously (i.e., in special classes for gifted students) as contrasted with heterogeneously (i.e., in classes with many ability levels represented). Forty-four students in grades 5-11 completed interviews or questionnaires while attending a summer residential program for gifted and talented students. Questions were designed to clarify the nature of academic and social outcomes under the two grouping conditions. ON the whole, the participants perceived homogenous grouping more positively with respect to academic outcomes. They learned more in the more challenging environment provided by homogeneous classes. However, they had mixed feelings about which setting better met their
social needs. Participants seemed to value having both similar peers in homogenous classes and the social diversity, of heterogeneous classes. A troubling finding that emerged was the preference of a few of the students for heterogeneous classes because they were easier and enabled them to attain a high class ranking with little work. Implications of the findings for educators and counselors of gifted students are discussed.


Abstract [ERIC]: The effects of various gifted programs on the self-concepts and depressive symptoms of 82 gifted and talented fifth- and sixth-grade students were evaluated. Sixth-grade gifted groups (pull-out and self-contained) scored higher on self-concept than did nongifted groups. No effects on depressive symptoms were found.


Abstract [ERIC]: Students in a self-contained gifted and talented fifth grade evaluated three major learning activities of the Full Option Science System (FOSS). Students rated the activities very positively and felt the activities had given them greater confidence to work in groups, to be creative, and to strive to accomplish hard tasks as well as developing their understanding of scientific concepts.


Abstract [ERIC]: This study investigated attitudes of parents (n=98) of services provided by a specialized school for which the majority of the students were gifted, had learning disabilities, or both. Parents rated services of the specialized school as being significantly more important and successful as compared to programs at previous schools.


Abstract [ERIC]: The study found relative independence of the specific components of self-concept in 200 gifted pupils enrolled in self-contained enrichment classes in grades 5 through 8. Self-perceptions of social and scholastic competence and of physical appearance were the major contributors to self-concept. There was no evidence of a developmental process.


Abstract [ERIC]: Intellectually gifted students (N=199) and students in the fine and performing arts (N=176) completed the High School Personality Questionnaire. Results indicated that gifted students obtained higher leadership potential scores, while talented students scored higher in creativity. Several significant differences were found in personality profiles of the two groups.

Meta-analytic reviews have shown that gifted students gain little from programs of minimal instructional modification (multilevel classes), more from greater modifications (cross-grade and within-class programs) and the most from those involving the greatest amount of curricular adjustment (enrichment and acceleration).


Abstract [ERIC]: A case study investigated the effectiveness of a new self-contained classroom with curriculum that was differentiated for 24 highly intellectually gifted fourth-and fifth-grade students. Results indicate the self-contained classroom provided a challenging learning environment for the students, but students' response to this more challenging environment varied considerably.


Thirteen research syntheses were analyzed to determine the academic, social, and psychological effects upon learners who are gifted and talented of three grouping practices: (1) ability grouping for enrichment; (2) mixed ability cooperative grouping for regular instruction; and (3) grouping for acceleration. It was concluded that the research showed strong, consistent support for the academic effects of most forms of ability grouping for enrichment and acceleration, but that the research is scant and weak concerning the socialization and psychological adjustment effects of these practices. Claims for the academic superiority of mixed ability grouping or for whole group instructional practices were not substantiated for gifted and talented learners. Other conclusions indicated that: academic outcomes of ability grouping vary substantially from effects reported for average and low ability learners; full time, pullout, and within-class grouping can all produce substantial academic gains; and there is little impact on self-esteem and a moderate gain in attitude toward subject in full time ability grouping.


Abstract [ERIC]: This study examined patterns of academic progress and outcomes in different inner city school settings (identified as gifted or general education) for African American and White lower, middle, and upper socioeconomic strata students. It followed 287 students' progress from kindergarten through their graduation year, 185 of whom were considered gifted and enrolled in a self-contained gifted program for all subjects in elementary school and core academic subjects in secondary school. Students' grades for math, reading, and science were recorded over time. Overall academic outcomes (grades and standardized test scores) were higher for gifted students enrolled in the program sometime during their school career than for general education students. Graduation rates were higher for gifted students who remained in the gifted program than for gifted students who left for general education or for general education students. Though the gifted program retained more African American than White students, a substantial group of African American students went to the general education program. White students remained in the gifted program at a higher rate than they did in the general education
program. Income was a factor in gifted students' graduation outcomes and grades, and standardized test scores varied by grade, program placement, race, and gender.

Witham, J. (1991). A full-time solution to part-time problems. *Gifted Child Today, 14*(6), 10-12. Abstract [ERIC]: This paper discusses the pros and cons of full-time, self-contained classes for gifted children; full-time schools and full-time classes; principles of differentiated curriculum; and research results on academic and social issues. The paper concludes that self-contained classes provide a differentiated program that better meets the needs of gifted students.

VanTassel-Baska, J., Willis, G. B., & Meyer, D. (1989). Evaluation of a full-time self-contained class for gifted students. *Gifted Child Quarterly, 33*(1), 7-10. Abstract: An elementary-school self-contained gifted class was compared to a control group on a general test of cognitive ability. Program participants exhibited significantly higher gains than did controls, and at the end of the program, participants also rated the quality of their school life more highly than did controls.

**Practice-based Resources and Materials**

Johnson, K. (2001). Integrating an affective component in the curriculum for gifted and talented students. *Gifted Child Today, 24*(4), 14-15. Gifted students and their affective needs are outlined in this article, including a rationale for why affective needs should be met in the regular curriculum. The article concludes with ideas for service learning projects, in particular, that channel the affect and cognitive needs of gifted students into productive learning options.

Mirsky, N. (1984). Starting an interage full time gifted class. *Gifted Child Today, no. 33*, 24-26. Abstract [ERIC]: The author describes the formation of a self-contained interage class for gifted children in grades one to three. The curriculum was project- and interest-based, and an effort was made to involve other teachers and students, thus avoiding the charge of elitism.

Rosselli, H. C. (1996). Gifted students: Meeting them halfway. *Schools in the Middle, 5*(3), 12-16. Abstract [ERIC]: Explains how middle level educators can provide learning environments supportive of gifted students by understanding in depth the differences and similarities between general education at that level and gifted education.

Steele, K. J. (1991). Improving the quality of elementary education through full time gifted classes. *Gifted Child Today, 14*(6), 52-55. Abstract [ERIC]: A small-town school corporation developed self-contained, full-time gifted classes for its elementary school students. This article describes program administration, acceleration and enrichment activities, staffing, and efforts to expand the benefits of the program to others.

Abstract [ERIC]: This article discusses a comprehensive program for gifted students with learning disabilities in Maryland's Montgomery Country Public Schools (MCPS). MCPS has developed special self-contained classes for gifted students with severe learning disabilities while those with moderate and mild disabilities receive gifted instruction and services in general education classrooms.
Self-contained Gifted Classroom – Subject Specific

Description
Gifted students are specifically placed in a class for full-time services with a teacher who has received professional development in differentiating curriculum and instruction for gifted learners. This approach is typically used at the upper elementary and secondary level where the entire school day or part of the school day is divided into content-specific instructional time.

Suggestions for Staff Expertise and Training

General Education Teacher
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers with a self-contained classroom of gifted learners need to be able to differentiate curriculum and instruction for gifted learners within the allotted class time. These teachers need initial and ongoing support to incorporate curriculum compacting strategies that allow gifted learners to move at an appropriate instructional pace within the self-contained classroom setting. General Education teachers also need and training to effectively collaborate with Gifted Intervention Specialists and other General Education teachers with self-contained classrooms to create and adapt curriculum for high ability learners.

Gifted Intervention Specialist
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. Gifted Intervention Specialists should also receive training in creating and adapting curriculum for high ability learners and in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners within self-contained classroom settings.

Level of Cost/Efficiency
Based on cost and efficiency requirements for training and materials, limited to teachers with a self-contained classroom of gifted learners, the self-contained gifted classroom setting, subject specific, is rated Low.

Literature and Research-based References
This study investigated student perceptions of differences in academic and social effects that occur when gifted and talented youth are grouped homogeneously (i.e., in special classes for gifted students) as contrasted with heterogeneously (i.e., in classes with many ability levels represented). Forty-four students in grades 5-11 completed interviews or questionnaires while attending a summer residential program for gifted and talented students. Questions were designed to clarify the nature of academic and social outcomes under the two grouping conditions. ON the whole, the participants perceived homogenous grouping more positively with respect to academic outcomes. They learned more in the more challenging environment provided by homogeneous classes. However, they had mixed feelings about which setting better met their social needs. Participants seemed to value having both similar peers in homogenous classes and
the social diversity, of heterogeneous classes. A troubling finding that emerged was the preference of a few of the students for heterogeneous classes because they were easier and enabled them to attain a high class ranking with little work. Implications of the findings for educators and counselors of gifted students are discussed.


Abstract [ERIC]: Students in a self-contained gifted and talented fifth grade evaluated three major learning activities of the Full Option Science System (FOSS). Students rated the activities very positively and felt the activities had given them greater confidence to work in groups, to be creative, and to strive to accomplish hard tasks as well as developing their understanding of scientific concepts.


This article describes the findings of a review of existing K-8 science curriculum materials that was carried out under the National Science Curriculum Project for High-Ability Learners. Twenty-seven sets of materials were reviewed using criteria developed and refined by project staff. The purpose of the review was to ascertain whether currently available materials met the new standards in the teaching of science and the needs of gifted learners. The review findings suggest that existing basal textbooks fail to meet new science curriculum standards for all students, but particularly for high-ability learners. Modular programs and supplementary materials were found to be superior to basal textbooks on most dimensions.


Abstract [ERIC]: Intellectually gifted students (N=199) and students in the fine and performing arts (N=176) completed the High School Personality Questionnaire. Results indicated that gifted students obtained higher leadership potential scores, while talented students scored higher in creativity. Several significant differences were found in personality profiles of the two groups.


Meta-analytic reviews have shown that gifted students gain little from programs of minimal instructional modification (multilevel classes), more from greater modifications (cross-grade and within-class programs) and the most from those involving the greatest amount of curricular adjustment (enrichment and acceleration).


This longitudinal study outlines a diagnostic-prescriptive talent development acceleration program in mathematics through Johns Hopkins University. Positive effects using this approach have been documented.

Thirteen research syntheses were analyzed to determine the academic, social, and psychological effects upon learners who are gifted and talented of three grouping practices: (1) ability grouping for enrichment; (2) mixed ability cooperative grouping for regular instruction; and (3) grouping for acceleration. It was concluded that the research showed strong, consistent support for the academic effects of most forms of ability grouping for enrichment and acceleration, but that the research is scant and weak concerning the socialization and psychological adjustment effects of these practices. Claims for the academic superiority of mixed ability grouping or for whole group instructional practices were not substantiated for gifted and talented learners. Other conclusions indicated that: academic outcomes of ability grouping vary substantially from effects reported for average and low ability learners; full time, pullout, and within-class grouping can all produce substantial academic gains; and there is little impact on self-esteem and a moderate gain in attitude toward subject in full time ability grouping.


Using the Stanley Model of Talent Identification and Development a high-ceiling testing instrument is administered to determine student placement and a diagnostic-prescriptive approach is taken to plan for the student’s accelerated classes in core academic areas, as appropriate. Over 33 years of research has been collected, suggesting that the approach produces significant achievement gains.

**Practice-based Resources and Materials**


This book outlines the importance of bibliotherapy for gifted students and suggests books appropriate for gifted learners based on their social-emotional/affective needs, characteristics, cognitive abilities, and interests. A reading list for varied grade levels is included.


Abstract [ERIC]: Explains how middle level educators can provide learning environments supportive of gifted students by understanding in depth the differences and similarities between general education at that level and gifted education.
Regular Classroom – No Grouping

Description

*Services are provided by the regular classroom teacher, and gifted students are not specifically grouped in the class (in contrast to Cluster Grouping below). Note that all regular classrooms do not meet the criteria for gifted services.* (p. 11)

This instructional model typically reflects a traditional grade-level oriented curriculum that does not address the cognitive needs of students identified as gifted.

Suggestions for Staff Expertise and Training

*General Education Teacher*

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers within a heterogeneous classroom need to be able to differentiate curriculum and instruction for gifted learners throughout the instructional day. These teachers need initial and ongoing support to incorporate curriculum compacting strategies that allow gifted learners to move at an appropriate instructional pace within the heterogeneous classroom setting, as well as other instructional strategies appropriate for differentiating curriculum and instruction for gifted learners. General Education teachers also need initial and ongoing training to effectively collaborate with Gifted Intervention Specialists and other General Education teachers to adapt curriculum for high ability learners.

*Gifted Intervention Specialist*

Gifted Intervention Specialists need to be able to support General Education teachers through training in multiple strategies that differentiate curriculum and instruction for gifted learners within a heterogeneous classroom. Gifted Intervention Specialists should receive training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners within the regular classroom setting.

Level of Cost/Efficiency

Because no other gifted services are provided, the General Education teacher is primarily responsible for meeting the needs of gifted learners. Therefore, all General Education teachers will require extensive training in differentiation for gifted learners. Based on cost and efficiency requirements for training and materials for all teachers, the regular classroom setting without specific grouping of gifted learners is rated High.

Literature and Research-based References


This study investigated student perceptions of differences in academic and social effects that occur when gifted and talented youth are grouped homogeneously (i.e., in special classes for gifted students) as contrasted with heterogeneously (i.e., in classes with many ability levels represented). Forty-four students in grades 5-11 completed interviews or questionnaires while attending a summer residential program for gifted and talented students. Questions were designed to clarify the nature of academic and social outcomes under the two grouping conditions. On the whole, the participants perceived homogenous grouping more positively with
respect to academic outcomes. They learned more in the more challenging environment provided by homogeneous classes. However, they had mixed feelings about which setting better met their social needs. Participants seemed to value having both similar peers in homogenous classes and the social diversity, of heterogeneous classes. A troubling finding that emerged was the preference of a few of the students for heterogeneous classes because they were easier and enabled them to attain a high class ranking with little work. Implications of the findings for educators and counselors of gifted students are discussed.


Meta-analytic reviews have shown that gifted students gain little from programs of minimal instructional modification (multilevel classes), more from greater modifications (cross-grade and within-class programs) and the most from those involving the greatest amount of curricular adjustment (enrichment and acceleration).


Abstract[Author]: This study addressed the questions and the challenges presented in the report by the United States Department of Education, Office of Educational Research and Improvement, entitled "National Excellence: A Case for Developing America's Talent." Consistent with the priorities of the Jacob Javits Act, this study was designed to assess the impact of providing gifted education pedagogy, specifically, a series of enrichment clusters, to the entire population of two schools in economically disadvantaged urban settings with a high percentage of minority students. Three elementary schools in two urban districts were selected to participate in the study. In one school from each of these districts, enrichment clusters were implemented and one school served as a comparison site. Students in each treatment school attended a pilot and two series of enrichment clusters. Students in all schools were assessed regarding their attitudes toward school and their content area preferences, and students from the treatment schools responded to questions regarding the enrichment clusters. Data were also collected from parents and teachers related to school satisfaction, use of enrichment strategies, and other variables Qualitative data were collected from teachers, administrators, students, and parents about the implementation of enrichment clusters. With regard to student interests, attitudes, and products, the findings were positive. Students indicated that they enjoyed their clusters, and students involved in the clusters displayed stronger interests than students from the comparison school. Approximately 90% of the students completed products in their clusters and there was no difference in the frequency of products completed when examined by achievement, gender, special program placement, or ethnicity. With regard to the quality of products, no differences were found among various achievement levels of students, perhaps indicating interests and commitment help to increase the quality of the products developed by students of various achievement levels in the enrichment clusters. Teacher practices were affected both in the enrichment clusters and in the teachers' regular classrooms. Advanced content was integrated into 95% of the clusters and included areas such as introduction of new concepts and content, teaching specific investigative methodologies, use of advanced vocabulary and authentic "tools," and use of advanced thinking and problem solving strategies. Approximately 60% of the teachers
who facilitated clusters indicated that they transferred strategies and content from the clusters into their classrooms, although this had not been requested of these teachers.

Reis, S. M., & Westberg, K. L. (1994). The impact of staff development on teachers' ability to modify curriculum for gifted and talented students. *Gifted Child Quarterly, 38*, 127-135. Abstract [ERIC]: Three levels of staff development were provided to 300 elementary teachers to train them in curriculum compacting for high ability students. Teachers eliminated about half of the content for targeted students. Teachers receiving the most intensive training created higher quality compactor forms for students and used more replacement strategies and more diverse options for targeted students.

Rogers, K. B. (1998). Using current research to make “good” decisions about grouping. *NASSP Bulletin, 82*(595), 38-46. Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.


Slavin, R. E. (1988). Synthesis of research on grouping in elementary and secondary schools. *Educational Leadership, 46*(1), 67-77. Certain grouping arrangements in elementary and secondary schools appear to be instructionally effective for students, but the psychological drawbacks may offset any advantages. The relative benefits and disadvantages of within-class grouping and between-class grouping are discussed, along with the problems with ability grouping.

Slavin, R. E. (1990). Achievement effects of ability grouping in secondary schools: A best-evidence synthesis. *Review of Educational Research, 60*(3), 471-499. Abstract [ERIC]: Best-evidence synthesis was used to review 29 research papers published in English that evaluate the effects of ability grouping on student achievement in secondary schools. Six randomized experiments, 9 matched experiments, and 14 correlational studies were reviewed. Findings do not indicate beneficial effects of ability grouping on achievement.

achievers in 27 studies. Alternatives to between-class ability grouping, including cooperative
learning and within-class grouping are discussed.

Middle School Classroom. ERIC Digest E536.
This brief paper summarizes guidelines for adapting instruction for advanced learners in
inclusive, mixed-ability middle school classrooms. A rationale for differentiating instruction is
followed by consideration of what differentiation is and is not. Characteristics of a differentiated
class are enumerated, including: instruction is concept focused and principle driven, on-going
assessment of student readiness and growth are built into the curriculum, and flexible grouping is
consistently used. Suggested ways to differentiate instruction are grouped into interest-based
adjustments, adjustments based on learning profile, and readiness-based adjustments. These last
adjustments involve offering students a range of learning tasks developed along eight continua as
follows: (1) concrete to abstract, (2) simple to complex, (3) basic to transformational, (4) fewer
facets to multi-facets, (5) smaller leaps to greater leaps, (6) more structured to more open, (7)
less independence to greater independence, and (8) slower to quicker. Suggested strategies for
managing a differentiated classroom include: use of multiple texts and supplementary materials,
interest centers, learning contracts, compacting, and group investigation. Teachers are urged to
prepare students and parents for a differentiated classroom, attend to issues of classroom
structure and management, and plan with team members and other colleagues interested in
differentiation. (ERIC abstract).

differentiation. Educational Leadership, 58(1), 6-11 SL W.
This article provides a rationale for how standards and differentiation align. Standards can serve
as a foundation for all learners but how teachers present information as well as the level of depth
or pacing provided can be differentiated.

How does it look? Understanding Our Gifted, 14(1), 3-6 SL.
This article outlines what differentiated instruction should look like in the regular classroom for
all students and how that is differentiated for the gifted learner based on a content, process,
product orientation to curriculum differentiation based on learner interests, ability, and learning
preferences.

Westberg, K. L., & Daoust, M. E. (2003, Fall). The results of the classroom practices survey
replication in two states. The National Research Center on the Gifted and Talented
Newsletter, pp. 3–8.
This article describes the replication of the Classroom Practices Survey Study. An overview of
the rationale, procedures, results, and conclusions of the replication study are described. The
results from this survey indicate that teachers with formal training in gifted education provide
curriculum modifications for high ability/gifted students more frequently.
**Practice-based Resources and Materials**

Gifted students and their affective needs are outlined in this article, including a rationale for why affective needs should be met in the regular curriculum. The article concludes with ideas for service learning projects, in particular, that channel the affect and cognitive needs of gifted students into productive learning options.

The National Association for Gifted Children suggests program standards in seven areas including program design, identification, program evaluation, curriculum and instruction, program administration and management, social-emotional guidance and counseling, and professional development. The program standards suggest considering issues outside the field of gifted education (e.g. standards) and also recommend a continuum of services with individualized differentiated education plans for gifted students.
Regular Classroom – with Cluster Grouping

Description

Several gifted students are deliberately placed in one class with a teacher who has received professional development in differentiating curriculum and instruction and agreed to provide differentiated curriculum and instruction for these clustered students within the regular classroom. Instruction for clustered students is primarily delivered by the regular classroom teacher. (p. 12)

Suggestions for Staff Expertise and Training

General Education Teacher

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers with a cluster of gifted learners need to be able to differentiate curriculum and instruction for gifted learners as well as provide appropriate instruction for the entire group of students. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace within the regular classroom setting, as well as other instructional strategies appropriate for differentiating curriculum and instruction for gifted learners.

Gifted Intervention Specialist

Gifted Intervention Specialists should receive training in creating and adapting curriculum for high ability learners and in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners within self-contained classroom settings.

Level of Cost/Efficiency

Because no other gifted services are provided, the General Education teacher is primarily responsible for meeting the needs of gifted learners when they are clustered in the regular classroom. Therefore, all General Education teachers will require extensive training in differentiation for gifted learners while providing the general grade-level curriculum. Based on cost and efficiency requirements for training and materials for all teachers assigned a cluster group, the regular classroom setting with a cluster group of gifted learners is rated Medium.

Literature and Research-based References


This study investigated student perceptions of differences in academic and social effects that occur when gifted and talented youth are grouped homogeneously (i.e., in special classes for gifted students) as contrasted with heterogeneously (i.e., in classes with many ability levels represented). Forty-four students in grades 5-11 completed interviews or questionnaires while attending a summer residential program for gifted and talented students. Questions were designed to clarify the nature of academic and social outcomes under the two grouping conditions. ON the whole, the participants perceived homogenous grouping more positively with respect to academic outcomes. They learned more in the more challenging environment provided by homogeneous classes. However, they had mixed feelings about which setting better met their social needs. Participants seemed to value having both similar peers in homogenous classes and
the social diversity, of heterogeneous classes. A troubling finding that emerged was the preference of a few of the students for heterogeneous classes because they were easier and enabled them to attain a high class ranking with little work. Implications of the findings for educators and counselors of gifted students are discussed.


Abstract [ERIC]: The Growing Giftedness Model for teaching gifted students is presented, which includes the following features: identification that relies entirely on scores and on demonstrated performance; cluster grouping during elementary school and classes dominated by gifted students at the secondary level; acceleration and enrichment; creative expression opportunities; service learning; and counseling.


Abstract [ERIC]: In this monograph, a causal-comparative, longitudinal study of cluster grouping at the elementary level is described and recommendations are made based on the findings. This study employed both quantitative and qualitative methodologies. The primary purpose of the study was to examine the effects of an existing cluster grouping program on the achievement and identification of students who participated in the program from third through fifth grade and to compare achievement with similar students who were not involved in a cluster grouping program. Descriptive and inferential statistics were used to address these areas. A secondary purpose of this study was to investigate the practices of the teachers who taught in the school using cluster grouping to help provide insight into their classrooms and the school, which was done using qualitative follow-up methods. Results included more students being identified as high achieving during the three program years, achievement scores increasing within the school using cluster grouping, and a significant interaction between the treatment and comparison school in favor of the treatment school. Additionally, qualitative findings indicated that teachers used flexible grouping, gifted education strategies, had high yet realistic expectations of their students, and were involved in gifted professional development. Contains approximately 100 references. (Author/CR)


Abstract [ERIC]: A study examined the use of cluster grouping in two elementary graduation classes (n=197). During the three program years, students involved in the school using cluster grouping were more likely to be identified as high achieving or above average, and all students had significant increases in achievement test scores.


Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability
students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.

This article provides a rationale for how standards and differentiation align. Standards can serve as a foundation for all learners but how teachers present information as well as the level of depth or pacing provided can be differentiated.

Practice-based Resources and Materials

Abstract [ERIC]: Meeting the needs of gifted students within the regular classroom requires appropriate uses of cluster grouping, where small groups of students with similar learning needs are assigned to a particular teacher; an extended support system for the teacher; and educational differentiation to meet student needs.

Abstract [ERIC]: A teacher describes the use of cluster grouping to meet the needs of six gifted students in her heterogeneous classroom. Considered are the definition and rationale for cluster grouping, classroom structure, cluster identification and profile, facilitation of cluster curriculum differentiation, teacher perceptions, and student/parent perceptions.

Gifted students and their affective needs are outlined in this article, including a rationale for why affective needs should be met in the regular curriculum. The article concludes with ideas for service learning projects, in particular, that channel the affect and cognitive needs of gifted students into productive learning options.

Abstract [ERIC]: Optimum conditions for gifted students in regular classrooms are discussed, including the advantages of cluster grouping and curriculum compacting. The importance of providing positive teacher attitudes toward gifted students and promoting psychological safety for the student who is gifted are emphasized. Seven cognitive and affective classroom strategies are recommended.

Annotation [ERIC]: This manual is a guide to consultation and collaboration for educators of gifted children and is based on the Resource Consultation and Collaboration Program implemented at 10 schools in Charlotte, North Carolina, over 2 years. Individual chapters of the
manual address the following topics: (1) overview of resource consultation and collaboration programs; (2) components of resource consultation and collaboration programs; (3) implementing a resource consultation and collaboration program in gifted education; (4) resource consultation and collaboration program staff development; (5) exemplary practices in differentiating curricula and instruction for gifted learners through resource consultation and collaboration; (6) exemplary differentiated lessons delivered through resource consultation and collaboration; (7) prototype schools with resource consultation and collaboration programs in gifted education; and (8) program pointers and potential pitfalls. An appendix provides various reproducible forms.

Abstract [ERIC]: This article examines cluster grouping as a viable option for meeting the needs of gifted and talented students. It also discusses the strengths and weaknesses of cluster grouping from the perspective of conclusions obtained through the implementation of cluster grouping in an elementary school district.

Abstract [ERIC]: This digest discusses research that documents the benefits of keeping gifted students together, the advantages and disadvantages of cluster grouping, and how to implement cluster grouping strategies. It argues that cluster grouping allows educators to come much closer to providing better educational services for groups of students with similar exceptional learning needs and that gifted students feel more comfortable when there are other students just like them in the class. Identification of gifted students for participation in the gifted cluster group is discussed, along with keeping progress records for gifted students in cluster groups and specific skills needed by cluster teachers. Cluster teachers should know how to recognize and nurture behaviors usually demonstrated by gifted students, create a learning environment in which all students will be stretched to learn, allow students to demonstrate and get credit for previous mastery of concepts, provide opportunities for faster pacing of new material, incorporate students' passionate interest into their independent studies, facilitate sophisticated research investigations and provide flexible grouping opportunities for the entire class.
Regular Classroom – with Whole Grade Acceleration

Description

A gifted student is moved to a higher grade level than would normally be expected for the current year, such as a double promotion (e.g., move from 3rd to 5th grade over the summer) at the end of the prior year or a mid-year promotion (e.g., start year in 2nd grade, move to 3rd during the year, and on to 4th after the summer) during the current year. (p. 11)

Suggestions for Staff Expertise and Training

General Education Teacher

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers with a gifted learner who has been accelerated by an entire grade level need to be able to differentiate curriculum and instruction for gifted learners as well as provide appropriate instruction for the entire group of students. These teachers need initial and ongoing support to incorporate strategies that allow accelerated gifted learners to move at an appropriate instructional pace within the regular classroom setting, as well as other instructional strategies appropriate for differentiating curriculum and instruction for gifted learners. General Education teachers also need to be aware of unique social-emotional needs of gifted learners who have been accelerated.

Gifted Intervention Specialist

Gifted Intervention Specialists should receive training in creating and adapting curriculum for high ability learners and in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners who have been accelerated by a full grade level.

Level of Cost/Efficiency

In this situation, the General Education teacher is primarily responsible for meeting the needs of the accelerated gifted learner in the regular classroom. Therefore, the General Education teacher will require training in differentiation for gifted learners while providing the general grade-level curriculum. Some differentiation will be accounted for by the more challenging content in the new grade level for the gifted learner. Based on cost and efficiency requirements for training for the teachers affected by the acceleration of a single student, the regular classroom setting with whole grade acceleration of a gifted learner is rated Low.

Literature and Research-based References


Students who are moved ahead tend to be more ambitious, and they earn graduate degrees at higher rates than other students. Interviewed years later, an overwhelming majority of accelerated students say that acceleration was an excellent experience for them. Accelerated students feel academically challenged and socially accepted, and they do not fall prey to the boredom that plagues many highly capable students who are forced to follow the curriculum for their age-peers.
With all this research evidence, why haven’t schools, parents, and teachers accepted the idea of acceleration? A Nation Deceived presents these reasons for why schools hold back America’s brightest kids:

- Limited familiarity with the research on acceleration
- Philosophy that children must be kept with their age group
- Belief that acceleration hurries children out of childhood
- Fear that acceleration hurts children socially
- Political concerns about equity
- Worry that other students will be offended if one child is accelerated.

This report shows that these reasons are simply not supported by research.

Johnsen, S. (2005). Within-class acceleration. [From the editor]. Gifted Child Today, 28(1), 5. This article describes ways teachers can accelerate the curriculum in their classrooms by pre-assessing students and modifying their instruction, allowing them the either move through the curriculum at a faster pace or to provide in-depth learning experiences with more depth.

Rimm, S. B., & Lovance, K. J. (1992). The use of subject and grade skipping for the prevention and reversal of underachievement. Gifted Child Quarterly, 36(2), 100-105. Abstract [ERIC]: Fourteen sets of parents and 11 gifted students who had been accelerated (early kindergarten entrance, grade skipping, and subject skipping) were interviewed. All parents and students indicated they would make the same decision again. Administrator attitudes became more positive, but teachers perceived some student adjustment problems.

Rogers, K. B. (1998). Using current research to make “good” decisions about grouping. NASSP Bulletin, 82(595), 38-46. Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.

Southern, T., & Jones, E. (Eds.). (1991). The academic acceleration of gifted children, New York: Teachers’ College Press. Social-emotional concerns, early college entrance, diagnostic-prescriptive approaches, grade skipping, and early school entrance as well as other accelerative options are discussed in this book, noting the research effects and findings for each.

Swiatek, M. A. (2000). A decade of longitudinal research on academic acceleration through the study of mathematically precocious youth. Roeper Review, 24,141-144. Using the Stanley Model of Talent Identification and Development a high-ceiling testing instrument is administered to determine student placement and a diagnostic-prescriptive approach is taken to plan for the student’s accelerated classes in core academic areas, as appropriate. Over 33 years of research has been collected, suggesting that the approach produces significant achievement gains.
Practice-based Resources and Materials


A tiered objectives model is recommended that teachers can use in mixed-ability classrooms to raise students' mathematics achievement. Guidelines for developing tiered activities include: identify objectives, create a set of activities for teaching each objective, identify the next level of increasing complexity, and group students according to assessed level-of-readiness.


This teacher-friendly book outlines the rationale for acceleration, the types of acceleration, and provides various usable forms and examples of ways teachers can collapse the curriculum, use diagnostic-prescriptive teaching, write written education plans tailored to student needs, and effectively document and proactively plan for gifted children’s growth and acceleration in school.
Regular Classroom – with Single Subject Acceleration

Description
Services are provided by the regular classroom teacher, and gifted students are not specifically grouped in the class. The accelerated student receives appropriate instruction in the accelerated area and grade-level instruction in other content areas.

Suggestions for Staff Expertise and Training

General Education Teacher
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers with a gifted learner who has been accelerated by an entire grade level within one subject area need to be able to differentiate curriculum and instruction for the gifted learner in that area as well as provide appropriate instruction for the entire group of students. These teachers need initial and ongoing support to incorporate strategies that allow accelerated gifted learners to move at an appropriate instructional pace within their area of acceleration within the regular classroom setting, as well as other instructional strategies appropriate for differentiating curriculum and instruction for gifted learners in the non-accelerated content areas. General Education teachers also need to be aware of unique social-emotional needs of gifted learners who have been accelerated.

Gifted Intervention Specialist
Gifted Intervention Specialists should receive training in creating and adapting curriculum for high ability learners and in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners who have been accelerated within a specific content area.

Level of Cost/Efficiency
In this situation, the General Education teacher is primarily responsible for meeting the needs of the accelerated gifted learner in the regular classroom. Therefore, the General Education teacher will require training in differentiation for gifted learners while providing the general grade-level curriculum. Some differentiation will be accounted for by the more challenging content in the accelerated area for the gifted learner. Based on cost and efficiency requirements for training for the teachers affected by the acceleration within a single content area, the regular classroom setting with single content area acceleration is rated Medium.

Literature and Research-based References


Students who are moved ahead tend to be more ambitious, and they earn graduate degrees at higher rates than other students. Interviewed years later, an overwhelming majority of accelerated students say that acceleration was an excellent experience for them. Accelerated students feel academically challenged and socially accepted, and they do not fall prey to the boredom that plagues many highly capable students who are forced to follow the curriculum for their age-peers.
With all this research evidence, why haven’t schools, parents, and teachers accepted the idea of acceleration? A Nation Deceived presents these reasons for why schools hold back America’s brightest kids:

- Limited familiarity with the research on acceleration
- Philosophy that children must be kept with their age group
- Belief that acceleration hurries children out of childhood
- Fear that acceleration hurts children socially
- Political concerns about equity
- Worry that other students will be offended if one child is accelerated.

This report shows that these reasons are simply not supported by research.

Johnsen, S. (2005). Within-class acceleration. [From the editor]. Gifted Child Today, 28(1), 5. This article describes ways teachers can accelerate the curriculum in their classrooms by pre-assessing students and modifying their instruction, allowing them the either move through the curriculum at a faster pace or to provide in-depth learning experiences with more depth.

Rimm, S. B., & Lovance, K. J. (1992). The use of subject and grade skipping for the prevention and reversal of underachievement. Gifted Child Quarterly, 36(2), 100-105. Abstract [ERIC]: Fourteen sets of parents and 11 gifted students who had been accelerated (early kindergarten entrance, grade skipping, and subject skipping) were interviewed. All parents and students indicated they would make the same decision again. Administrator attitudes became more positive, but teachers perceived some student adjustment problems.

Rogers, K. B. (1998). Using current research to make “good” decisions about grouping. NASSP Bulletin, 82(595), 38-46. Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.

Southern, T., & Jones, E. (Eds.). (1991). The academic acceleration of gifted children, New York: Teachers’ College Press. Social-emotional concerns, early college entrance, diagnostic-prescriptive approaches, grade skipping, and early school entrance as well as other accelerative options are discussed in this book, noting the research effects and findings for each.

Swiatek, M. A. (2002). A decade of longitudinal research on academic acceleration through the study of mathematically precocious youth. Roeper Review, 24,141-144. Using the Stanley Model of Talent Identification and Development a high-ceiling testing instrument is administered to determine student placement and a diagnostic-prescriptive approach is taken to plan for the student’s accelerated classes in core academic areas, as appropriate. Over 33 years of research has been collected, suggesting that the approach produces significant achievement gains.
Practice-based Resources and Materials

This book outlines the importance of bibliotherapy for gifted students and suggests books appropriate for gifted learners based on their social-emotional/affective needs, characteristics, cognitive abilities, and interests. A reading list for varied grade levels is included.

This teacher-friendly book outlines the rationale for acceleration, the types of acceleration, and provides various usable forms and examples of ways teachers can collapse the curriculum, use diagnostic-prescriptive teaching, write written education plans tailored to student needs, and effectively document and proactively plan for gifted children’s growth and acceleration in school.
Regular Classroom – with Early Entrance to Kindergarten

Description

Students are admitted to kindergarten before they have reached the district’s usual cutoff age and date for kindergarten. (e.g., a child with an October birthday would be eligible for early entrance even if the district’s cut off date was September 30). (p. 11)

Suggestions for Staff Expertise and Training

General Education Teacher

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers with a gifted learner who has been permitted to enter Kindergarten earlier than his or her age peers need to be able to differentiate curriculum and instruction for gifted learners as well as provide appropriate instruction for the entire group of students. These teachers need initial and ongoing support to incorporate strategies that allow accelerated gifted learners to move at an appropriate instructional pace within the regular classroom setting, as well as other instructional strategies appropriate for differentiating curriculum and instruction for gifted learners. General Education teachers also need to be aware of unique social-emotional needs of gifted learners who have been accelerated.

Gifted Intervention Specialist

Gifted Intervention Specialists should receive training in creating and adapting curriculum for high ability learners and in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners who have been enrolled in Kindergarten early.

Level of Cost/Efficiency

In this situation, the General Education teacher is primarily responsible for meeting the needs of the accelerated gifted learner in the regular classroom. Therefore, the General Education teacher will require training in differentiation for gifted learners while providing the general grade-level curriculum. Some differentiation will be accounted for by the more challenging content in the new grade level for the gifted learner. Based on cost and efficiency requirements for training for the teachers affected by the acceleration of a single student, the regular classroom setting with whole grade acceleration of a gifted learner is rated Low.

Literature and Research-based References


Abstract [ERIC]: Examines how early kindergarten entrants fare academically and socially/emotionally in their schooling. Screening procedures are used to identify children with exceptional ability and to eliminate from early entrance children likely to have adjustment difficulties. The screening battery includes measurements of academic readiness, social/emotional maturity, and a physical examination, followed by a trial entrance period. Alternatives are suggested.

Abstract [ERIC]: The accuracy of the Brigance K&1 Screen in the early identification of Head Start children with possible cognitive/academic giftedness was explored with 134 children, 13 of whom were identified as potentially gifted on the K-ABC. These potentially gifted children also performed significantly better on the Brigance than did other children. Teacher ratings were ineffective in detecting potentially gifted children.


Abstract [ERIC]: Fourteen sets of parents and 11 gifted students who had been accelerated (early kindergarten entrance, grade skipping, and subject skipping) were interviewed. All parents and students indicated they would make the same decision again. Administrator attitudes became more positive, but teachers perceived some student adjustment problems.


**Practice-based Resources and Materials**

Guenther, A. (1998). *What parents and teachers should know about academic acceleration*. Storrs, CT: National Research Center on the Gifted and Talented. Abstract [ERIC]: Designed for teachers and parents, this pamphlet addresses academic acceleration for gifted children and offers brief descriptions of some major types of acceleration along with issues of assessment and appropriateness for each. Early admission to kindergarten is described as attractive because it allows children to be accelerated without the disruption of social life and curriculum that later grade skipping might cause. Primary school advancement may cause concerns about serious difficulties such as loss of friendships with age peers, difficulty fitting in with the new class, and problems with both emotional and physical maturity, however, most research studies on grade skipping have not found these commonly feared effects. Many high schools and middle schools offer a wide range of acceleration options. Because students are with their age peers, there are fewer concerns about possible detrimental effects. The last type of academic acceleration described is early college entrance, one of the most controversial acceleration practices. Advantages include increased likelihood of pursuing graduate studies and increased motivation due to an appropriate level of challenge. Possible negatives include difficulty with peer relations and regret at missing out on normal high school and college experiences.

VanTassel-Baska, J. (2004). *The acceleration of gifted students’ programs and curriculum*. Waco, TX: Prufrock Press. This teacher-friendly book outlines the rationale for acceleration, the types of acceleration, and provides various usable forms and examples of ways teachers can collapse the curriculum, use diagnostic-prescriptive teaching, write written education plans tailored to student needs, and effectively document and proactively plan for gifted children’s growth and acceleration in school.
Advanced Placement (AP) course

Description

College-level courses with corresponding examinations in multiple subject areas (e.g., mathematics, art, history). Credit for college may be obtained if a student takes an AP examination sponsored by the College Entrance Examination Board and given in spring of each school year. Note that all AP courses do not meet the criteria for gifted services. (p. 12)

Suggestions for Staff Expertise and Training

General Education Teacher

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers who teach Advanced Placement courses need to complete the training required by the College Board in addition to being able to differentiate curriculum and instruction for gifted learners. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace within the AP classroom setting, as well as other instructional strategies appropriate for differentiating curriculum and instruction for gifted learners.

Level of Cost/Efficiency

Based on cost and efficiency requirements for training and materials related to AP and gifted education, the Advanced Placement classroom setting is rated Medium.

Literature and Research-based References

Curry, W., MacDonald, W., & Morgan, R. (1999). The Advanced Placement program: Access to excellence. Journal of Secondary Gifted Education, 11(1), 17-23. Abstract [ERIC]: In this article, the Advanced Placement (AP) Program of the College Board is described. It discusses the quality and standards for AP classes and examines the success of AP students, AP Scholar Awards, and resources for information on the AP program. A list of AP subjects and examinations is provided.

Herr, N. E. (1993). The relationship between Advanced Placement and honors science courses. School Science and Mathematics, 93(4), 183-187. Abstract [ERIC]: Surveyed schools to determine the relationships between honors and advanced placement (AP) science courses. Concludes that, once AP classes are established, honors classes typically undergo a period of redefinition and are either eliminated or assume subservient roles.

Nugent, S. A., & Karnes, F. A. (2002). The Advanced Placement program and the International Baccalaureate programme: A history and update. Gifted Child Today, 25(1), 30-39. This article compiles information from program web sites, articles, and interviews with experts to describe the history and current status of the Advanced Placement program and the International Baccalaureate program. The development of the Pre-AP program, the Primary Years program, and the Middle Years program is discussed.

Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.


Abstract [ERIC]: Despite scoring lower on the mathematics Scholastic Assessment Test (SAT-M) prior to taking an advanced placement calculus course, female students (n=85) scored as well as males (n=51) on the Advanced Placement BC level calculus test. Predictors of AP scores were: first, scores on the Calculus Readiness Test; second, scores on the SAT-M; and third, class participation.


Discussion of Advanced Placement (AP) programs as a talent development option for gifted high school students focuses on their rationale as an example of differentiated curriculum, benefits of advanced placement for these students, important issues in talent development such as quality instruction and models/mentors, special problems of AP classes, and persistent problems such as curricular coherence and grouping.

**Practice-based Resources and Materials**

College Board AP Central®, http://apcentral.collegeboard.com
Post Secondary Enrollment Option Course

**Description**

_Students may enroll in college-level courses, receive college credit and credit toward graduation from high school at the same time. Note that all PSEO courses do not meet the criteria for gifted services._ (p. 12)

**Suggestions for Staff Expertise and Training**

**College Faculty**

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. College faculty who teach gifted learners in a post-secondary setting need to differentiate curriculum and instruction for gifted learners as well as provide appropriate services for the entire enrollment of their course. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace within the college-level course as well as other instructional strategies appropriate for differentiating curriculum and instruction for gifted learners.

**Level of Cost/Efficiency**

Based on cost and efficiency requirements for training and materials related to post secondary instruction, including matriculation fees and training for post-secondary instructors, PSEO setting is rated Medium.

**Literature and Research-based References**


Abstract [ERIC]: Fourteen sets of parents and 11 gifted students who had been accelerated (early kindergarten entrance, grade skipping, and subject skipping) were interviewed. All parents and students indicated they would make the same decision again. Administrator attitudes became more positive, but teachers perceived some student adjustment problems.


Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.


Social-emotional concerns, early college entrance, diagnostic-prescriptive approaches, grade skipping, and early school entrance as well as other accelerative options are discussed in this book, noting the research effects and findings for each.

**Practice-based Resources and Materials**

Abstract [ERIC]: In this article, a high school student describes his experience pursuing simultaneous coursework at the college level. The complexities of special college admission processes are outlined, and the options presented by college honors courses and extracurricular activities are discussed. The choice of what college to attend after completing high school is described as especially complicated for students who enroll in college while still attending high school.
Honors Class

Description
Specific subject area classes which are differentiated from a regular (same) subject area class in terms of breadth, depth, and complexity. Note that all honors classes/courses do not meet the criteria for gifted services. (p. 12)

Suggestions for Staff Expertise and Training
General Education Teacher
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers with an Honors course have similar needs to those that work with self-contained classrooms of gifted learners. These teachers need to be able to differentiate curriculum and instruction for gifted learners within the allotted class time. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace within the self-contained classroom setting and at appropriate levels of breadth, depth, and complexity. General Education teachers also need and training to effectively collaborate with Gifted Intervention Specialists and other General Education teachers with self-contained classrooms of gifted learners to create and adapt curriculum for high ability learners.

Level of Cost/Efficiency
Based on cost and efficiency requirements for training and materials, limited to only teachers with an honors course or self-contained classroom of gifted learners, the Honors Class setting is rated Low.

Literature and Research-based References
Abstract [ERIC]: A study examined views of teachers about the impact of honors classes on secondary students in regular classes with gifted students removed and on the gifted students in honors classes. Results show honors classes in basic subjects are positive for honors and regular students and for teachers of both.

Abstract [ERIC]: Surveyed schools to determine the relationships between honors and advanced placement (AP) science courses. Concludes that, once AP classes are established, honors classes typically undergo a period of redefinition and are either eliminated or assume subservient roles.

Practice-based Resources and Materials
This teacher-friendly book outlines the rationale for acceleration, the types of acceleration, and provides various usable forms and examples of ways teachers can collapse the curriculum, use diagnostic-prescriptive teaching, keep written education plans tailored to student needs, and
effectively document and proactively plan for gifted children’s growth and acceleration in school.
Educational Option (Includes Independent Study)

Description
Defined in OAC 3301-35-01 and 06, Educational Options provide experiences for individual students who need services not available in the regular school setting. They may include independent study, mentoring, and distance learning (see OAC for complete list.) (p. 12)

Suggestions for Staff Expertise and Training
General Education Teacher/Gifted Intervention Specialist/Gifted Coordinator
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. Teachers and administrators working with students in the Educational Option need to be able to differentiate curriculum and instruction for gifted learners within the instructional options provided through this model. They need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity. These teachers also need training to effectively collaborate with Gifted Intervention Specialists and other General Education teachers of gifted learners to create and adapt curriculum for high ability learners.

Level of Cost/Efficiency
Based on cost and efficiency requirements for training and materials, the Educational Option setting is rated Low.

Literature and Research-based References
Gagne’s Differentiated Model of Giftedness and Talent illustrates the impact of environmental catalysts such as family, community, life events, and interests as well as natural catalysts such as student precocity and intelligence that impact life achievement, suggesting importance on providing community and family resources in a talent domain for precocious students.

Abstract [ERIC]: This study examined the impediments a new private secular school with students working at above grade level encountered in it implementation of a project-based curriculum within the context of constructivist theory. Examined were the intended or formal curriculum, its implementation, and effects on the implementation. Data were gathered by observing classrooms, attending board and curriculum committee meetings, and interviewing students, teachers, and parents. The curriculum of the school promised learning that was real, contextual, and engaging. One impediment to forming the curriculum was differing perceptions between parents and board members about its form. Parents also showed concern over differentiation in instruction and wanted their children to receive challenging work. Also, parents who wanted specific subjects emphasized were not realizing the intended goals of integrated learning activities. Systems of structure were imposed on the curriculum, including structure in the physical environment, scheduling of content, time use, and teacher responsibilities. With an open curriculum, the teachers had a greater influence on structure than when it is set by outside
goals or standards. The largest discrepancy between intended and implemented curriculum was the dichotomy between project-based, integrated curriculum and academic or subject-based curriculum. An appendix of research records is included.

Abstract [ERIC]: Explored the meaning of curricular differentiation for 11 gifted elementary school students by examining responses to open-ended activities. Participants' responses differed from typical students. Differentiation occurred by participants responding in more depth, with higher level skills, and in ways that were guided by their learning styles.

Moon, S. M., Feldhusen, J. F., & Dillon, D. R. (1994). Long-term effect of an enrichment program based on the Purdue Three-Stage Model. *Gifted Child Quarterly, 38*, 38-48. Based on student and parent questionnaires and school data, the Purdue Three-Stage Model of enrichment was examined. Students preferred to work on personally-generated studies based on their areas of interest instead of teacher assigned ones.

Moore, B. (2005). Developing research skills in gifted students. In F. A, Karnes & S. M. Bean (Eds.), *Methods and materials for teaching the gifted (2nd)*. Waco, TX: Prufrock Press. This chapter outlines how educators can design opportunities for students to develop research skills using a given template that incorporates the steps of the research model.

Renzulli, J. (1997). *Interest-a-lyzer family of instruments*. Mansfield Center, CT: Creative Learning Press. This manual describes the six interest assessment tools that comprise the Interest-A-Lyzer "Family of Instruments." Dr. Renzulli discusses the importance of assessing student interests and provides suggestions for administering and interpreting these instruments in the school setting. Sample pages from each interest assessment tool are included in the appendix.

Renzulli, J. S., & Reis, S. M. (2003). *The schoolwide enrichment model: Developing creative and productive giftedness*. In N. Colangelo & G. Davis (Eds.), *Handbook of gifted education (3rd ed)*. Boston, MA: Allyn & Bacon. This chapter outlines the research evidence and “how-to” applications of the Schoolwide Enrichment Model, including how students may explore and research areas of interest after compacting out of content already known.

Rogers, K. B. (1998). Using current research to make “good” decisions about grouping. *NASSP Bulletin, 82*(595), 38-46. Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.
VanTassel-Baska, J., & Brown, E. (2005). Gifted education curricular models. In F. Karnes & S. Bean (Eds.), *Methods and materials for teaching the gifted*. Waco, TX: Prufrock Press. This chapter outlines an analysis study of curriculum model comparisons including the Integrated Curriculum Model, the Schoolwide Enrichment Model, Schlichter Model for Talents Unlimited, Sternberg’s Triarchic Model, Gardner’s Multiple Intelligence Model, Betts’ Autonomous Learner Model, The Kaplan Grid, the Purdue Three-Stage Enrichment Model, and others. Comparisons regarding the research base, curriculum, teacher training, ease of implementation, and student effectiveness data are listed.

**Practice-based Resources and Materials**


The Autonomous Learner Model suggests that as gifted student needs are met they will become autonomous learners. The model is divided into five dimensions: orientation, individual development, enrichment activities, seminars, and in-depth study. Suggestions for scope and sequence development and independent study programs are emphasized.

Center for Gifted Education (2000). *Center for Gifted Education research model*. Williamsburg, VA: College of William and Mary, Author.

This research model is based on Paul’s Reasoning Model and provides step-by-step questions to assist students with conducting real-world research through question posing, data collection, interpretation, product creation and determination of implications and consequences based on the data.


The Independent Study Program provides resource cards that guide students through the eight steps of independent study: selecting a topic, organizing a topic, asking questions, using a study method, collecting information, developing a product, presenting information, and evaluating the study. Instructions for teacher use and tips for classroom management are included.


Part of the Gifted Treasury Series, *Developing Creative Leadership* provides an overview of leadership in the crucial grades of 6-12. Drawing upon theories based on cognitive and affective leadership, and the role of leadership in gifted education, leadership is discussed as it pertains to research projects, problem solving, interpersonal communication, and decision-making. Strategies are provided for curriculum planning in the first half of the book in preparation for the second half, which presents practical units for developing leadership. Suggestions are made for developing programs around the Leadership Training Model (LTM), a comprehensive model on which gifted programs can be based.


This teacher-friendly book provides forms, templates, and examples of ways teachers can pre-assess student learning and provide alternate activities based on student interest. Five-most
difficult first strategies as well as curriculum compacting approaches are emphasized along with student contracts and menus.
Guidance Services

Description

Services received from a guidance counselor and/or guidance program specifically designed to meet the social and emotional needs of gifted children, including making academic and career choices. (p. 11)

Suggestions for Staff Expertise and Training

School Counselor and/or Psychologist

All school staff who work with gifted learners should receive training in the characteristics and needs of gifted learners. Those responsible for providing guidance programs to meet the social emotional needs of gifted learners should receive training in identifying and working with specific social-emotional characteristics that are typically unique to gifted learners (i.e., perfectionism, heightened sensitivity, heightened sense of justice, etc.), as well as corresponding strategies to assist gifted learners in the emotional development. Those responsible for providing guidance programs to assist students in making academic and career choices should receive training in and understand the talent development process in various domains and the preparation that is necessary for gifted learners to be successful in their talent areas.

Level of Cost/Efficiency

Based on cost and efficiency requirements for training and materials, the Guidance Services setting is rated Medium.

Literature and Research-based References


This study of 152 Black males and females found that 62 students were underachieving and had less positive racial identities than achieving students. Suggestions for reducing underachievement including a counseling focus to help some Black students cope with the difficulties of being in a predominately White gifted program (e.g., negative peer pressures, poor peer relations, feelings of isolation, and sensitivity about feeling different).


Based on two in-depth case studies of gifted African American males in an urban high school, it was found that factors that influenced underachievement appear to be an inappropriate match with the curricular activities and learning style, inappropriate counseling and class placement, and inconsistent family role models. The authors suggest the importance of training counselors for diversity, working closely with families, and providing enrichment activities outside the school days. (S. Johnsen)

Giftedness was said to involve high mental ability, commitment to a particular task, and creativity. Emotional giftedness, in turn, was said to involve the capacity to be aware of feelings, to differentiate among feelings, and to create better and deeper relationships, among other characteristics. Based on 11 case studies, the following question was posed: Did the highest-scoring EIQ participants fit the emotional giftedness profile? The 11 case studies suggest that emotional intelligence and emotional giftedness are related. First, students with high emotional intelligence appeared to better and more completely organize emotional material about peer relationships, compared to those lower in emotional intelligence. In addition, those higher in emotional intelligence portrayed emotional situations in a more accurate and rich fashion that included more of the subtle and sometimes conflicting feelings of those around them, compared even to other participants roughly matched on verbal intelligence. There was a further suggestion that, behaviorally, those higher in emotional intelligence stood up to those who do unpleasant, wrong, or destructive acts. It was also of note that general and emotional intelligence may work together.


A research based article regarding the effectiveness of mentorships is outlined with procedural considerations for implementing mentorship programs in schools.

Practice-based Resources and Materials

This practical guide provides ideas, forms, and guidance for gifted students getting ready to enter college. Topics include: what colleges look for, what students should be doing and what courses they should take at different grade levels, college entrance exams, and learning about different colleges.

This is a very comprehensive book about research, theory and practices in gifted education. Chapters cover theories of giftedness, identification, the gifted child's families, counseling issues, curriculum, instructional theory, teaching methods, etc. The authors give not just the research about each issue or practice they present, but the assumptions underlying them (taken from http://www.ctd.northwestern.edu/resources/bibliography/identification.html).

This book describes reasons why black students may underachieve and outlines practical ways in which teachers can provide positive, high level learning experiences to reduce underachievement in minority populations.

This book outlines the importance of bibliotherapy for gifted students and suggests books appropriate for gifted learners based on their social-emotional/affective needs, characteristics, cognitive abilities, and interests. A reading list for varied grade levels is included.

Gifted students and their affective needs are outlined in this article, including a rationale for why affective needs should be met in the regular curriculum. The article concludes with ideas for service learning projects, in particular, that channel the affect and cognitive needs of gifted students into productive learning options.

This chapter defines what affective education is and provides a rationale for using affective education in the curriculum for gifted learners. Specific ideas for including the affective domain in the regular curriculum are addressed including bibliotherapy, service learning, cinematherapy, incorporation of the arts, a nurturing classroom climate, character education, and metacognition. Resources are included in the appendix.

Part of the Gifted Treasury Series, *Developing Creative Leadership* provides an overview of leadership in the crucial grades of 6-12. Drawing upon theories based on cognitive and affective leadership, and the role of leadership in gifted education, leadership is discussed as it pertains to research projects, problem solving, interpersonal communication, and decision-making. Strategies are provided for curriculum planning in the first half of the book in preparation for the second half, which presents practical units for developing leadership. Suggestions are made for developing programs around the Leadership Training Model (LTM), a comprehensive model on which gifted programs can be based.
Magnet School

Description
Magnet schools are often created to provide students with the opportunity to specialize in a specific field or domain of interest or ability, such as the Arts, Science and Technology, or the Humanities, and/or used as a way to racially or economically integrate public schools (see Magnet Schools of America, http://www.magnet.edu/about.htm). Not all magnet schools meet requirements for gifted services.

Magnet schools created thru gifted education are typically designed and developed to meet the needs of gifted learners within a specific domain or field or at an advanced level appropriate to their learning needs and characteristics. These magnet schools often offer a more rigorous academic curriculum and/or advanced professional preparation in a specific field or domain (i.e., professional training in the arts, professional training in the research sciences, etc.).

Suggestions for Staff Expertise and Training

General Education Teacher
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers in a gifted education-based magnet schools need to be able to differentiate curriculum and instruction for gifted learners within the allotted class time. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace within the classroom setting and at appropriate levels of breadth, depth, and complexity. General Education teachers also need initial and ongoing training to effectively collaborate with and other teachers and specialists to create and adapt curriculum for high ability learners. In magnet school programs, this curriculum should incorporate the area of focus as well as high-level curriculum and instructional strategies.

Arts Specialist
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. Arts Specialists in a gifted education-based magnet schools need to be able to differentiate curriculum and instruction for gifted learners within the arts course areas to supplement the specialty focus of the school. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace within the classroom setting and at appropriate levels of breadth, depth, and complexity. Arts Specialists within a magnet school focused on advanced training in the Arts need to be able to create and adapt curriculum for artistically talented students. In magnet school programs, this curriculum should incorporate the area of focus as well as high-level curriculum and instructional strategies. These Arts specialists also need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace within their talent areas and at appropriate levels of breadth, depth, and complexity within the domain of the Arts.

Other Specialist
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. Domain or Focus-area Specialists in a gifted education-based magnet schools need to be able to differentiate curriculum and instruction for gifted learners within the appropriate course areas as indicated by the specialty focus of the school. These
teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace within the classroom setting and at appropriate levels of breadth, depth, and complexity. In magnet school programs, this curriculum should incorporate the area of focus as well as high-level curriculum and instructional strategies. These specialists also need initial training and ongoing support to effectively collaborate with and other teachers and specialists to create and adapt curriculum for high ability learners.

**Gifted Intervention Specialist**

In a gifted education-based magnet school, the Gifted Intervention Specialist should be available to provide support and resources for General Education and other Specialists in the magnet program.

**Gifted Coordinator**

In a gifted education-based magnet school, the Gifted Coordinator should be available to provide support and resources for General Education and other Specialists in the magnet program. The Gifted Coordinator should be able to collaborate with the magnet school faculty and administration to provide students with appropriate services in their talent or focus area.

**Level of Cost/Efficiency**

Based on cost and efficiency requirements for training and materials, especially start-up or transitional costs, the Magnet School setting is rated High.

**Literature and Research-based References**


Abstract [ERIC]: School district accountability efforts have been challenged to develop procedures that determine the effects of their programs on student achievement within the typical implementation setting (i.e., nonrandom student assignment to nested school within program placements). Disentangling program effects from contextual and participant factors involves strategic considerations for data, design, and analysis. This paper presents an application of a two-level student-program hierarchical linear modeling (HLM) procedure to examine value-added effects of the Prince George's County, Maryland, Magnet School Programs at improving student academic performance. Examples of data handling and preparation for multilevel analysis are provided. Results from this study were primary considerations in the district superintendent's decisions regarding the expansion, continuation, and elimination of particular magnet school programs. The main findings in the study were: (1) overall, elementary students in magnet programs perform better than nonmagnet students; (2) this outcome is largely due to the fact that more able students are self-selected for the magnet program; and (3) when student ability is accounted for in the evaluation design, students in magnet school programs do not perform as well as students in nonmagnet programs. This last finding was further confirmed using unadjusted data in which talented and gifted (TAG) students in magnet programs did not perform as well as TAG students in nonmagnet schools. Appendixes contain tables of target data and program variables and a discussion of the statistical underpinnings of the HLM models used.

Abstract [ERIC]: Fifteen gifted students (grades 1-6) in a magnet school participated in phenomenological interviews. The students described the social milieu of the school as the backdrop for the meaning of the experience of attending the school. Four themes emerged across magnet school experiences, others, role, personal development, and time.


Abstract [ERIC]: This article provides an overview of the characteristics of an effective arts education program, descriptions of the various options available for artistically talented students seeking specialized training through performing and visual arts schools, and guidelines to those interested in planning a new school for the arts.


Abstract [ERIC]: A study investigated the relationship between what teachers reported they do in their elementary (n=91) and middle school (n=64) classrooms and students' perceptions of classroom activities. Magnet school gifted students reported significantly more challenge than their gifted and other peers at the middle school level, whereas no such differences existed at the elementary level.


Abstract [ERIC]: A survey examined educational aspirations and perceptions of school climate among gifted students at the Maine School of Science and Mathematics, a state-funded rural magnet school serving grades 11 and 12. Students at the magnet school completed the 84-item Grades 6-12 Aspirations Survey, returning 97 usable forms. The instrument has 12 scales: 2 measure student aspirations, 8 measure student perceptions of school climate, and 2 estimate student enjoyment of life and achievement motivation. Results were compared to an archive of survey data from 260 11th- and 12th-grade students of general ability. Compared to the archive data, magnet school students reported higher levels of aspirations, achievement motivation, general enjoyment of life, and perceptions of school climate conditions. Findings suggest that high-ability secondary students attending magnet schools have high aspirations, higher than those of students in a general-ability sample. In addition, magnet school students appear to perceive a school climate that is supportive and fosters achievement and aspirations to a greater extent than do general-ability students attending traditional high schools.

**Practice-based Resources and Materials**

Abstract [ERIC]: Describes a study of gifted freshmen in a magnet high school that investigated whether learning style would change after a year in a technology-rich educational environment using constructivist learning techniques. Conclusions regarding learning style were inconclusive, but results showing effects on the curriculum and the social context are discussed.

Abstract [ERIC]: Describes the Clarkton School of Discovery in Clarkton, North Carolina, a gifted-and-talented magnet middle school that is open to all students in the school district.

Abstract [ERIC]: As one Houston middle school demonstrates, a magnet program for gifted students can be successfully integrated with a regular program via music and art electives and whole-school activities. Gifted students are accelerated in many but not all courses; regular students can choose to be accelerated in specific content areas.

Abstract [ERIC]: In this interview, Dr. Abraham Tannenbaum, an author and leader of numerous research projects concerning gifted and talented students, discusses homeschooling, the impact of charter schools, magnet schools, and school choice on gifted education, the Ganiech psychosocial definition of giftedness, and the development of gifted programs.
Other: Early Entrance to College

Description

Early entrance to post-secondary education is a form of acceleration where able students finish their secondary diploma requirements ahead of their age peers and start post-secondary courses early.

Suggestions for Staff Expertise and Training

General Education Teacher

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers working with students preparing for early entrance into a postsecondary environment need to be able to differentiate curriculum and instruction for these gifted learners. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity.

Gifted Intervention Specialist/Gifted Coordinator

For early entrance to a post-secondary environment, the Gifted Coordinator should be available to provide support and resources for the student in their family making the decision to become an early entrant. The Gifted Coordinator should be able to collaborate with the early entrance program administration to provide students with appropriate services and a successful transition to the new environment.

College Faculty

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. College faculty working with students who have entered a postsecondary environment early need to be able to differentiate curriculum and instruction for these gifted learners. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity. These teachers also need to be supportive of students’ social-emotional needs as they adapt to their new learning and living environment.

Other: Early Entrance Program Administrators

Early entrance program administrators working with students who have entered a postsecondary environment early need to be able to provide a program that helps the early entrants make a successful transition to the postsecondary environment. Program staff need to be supportive of students’ social-emotional needs and knowledgeable of other resources on campus that may provide students with support in areas unrelated to the early entrance program. These programs also need to be flexible to meet the diverse needs of the early entrants and their families.

Level of Cost/Efficiency

Based on cost and efficiency requirements for training and materials, the Early Entrance setting is rated Low.

Literature and Research-based References
Abstract [ERIC]: A study explored the first semester experiences of 10 students (ages 17-18) who enrolled in the National Academy of Arts, Science, and Engineering (NAASE), an early entrance program at the University of Iowa. Students' perceptions were influenced by their transition experiences, their relationships, and the quality of their learning experiences.

Abstract [ERIC]: Fourteen sets of parents and 11 gifted students who had been accelerated (early kindergarten entrance, grade skipping, and subject skipping) were interviewed. All parents and students indicated they would make the same decision again. Administrator attitudes became more positive, but teachers perceived some student adjustment problems.

Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.

Social-emotional concerns, early college entrance, diagnostic-prescriptive approaches, grade skipping, and early school entrance as well as other accelerative options are discussed in this book, noting the research effects and findings for each.

**Practice-based Resources and Materials**

Abstract [ERIC]: In this article, a high school student describes his experience pursuing simultaneous coursework at the college level. The complexities of special college admission processes are outlined, and the options presented by college honors courses and extracurricular activities are discussed. The choice of what college to attend after completing high school is described as especially complicated for students who enroll in college while still attending high school.

This teacher-friendly book outlines the rationale for acceleration, the types of acceleration, and provides various usable forms and examples of ways teachers can collapse the curriculum, use
diagnostic-prescriptive teaching, write written education plans tailored to student needs, and effectively document and proactively plan for gifted children’s growth and acceleration in school.
Other: Mentorship

Description

Other Service: Given that the above codes represent nearly all of the possible options for services allowed under OAC, use of this code should be rare, and is likely to generate a request for additional information from the district to document the nature of the “other service”. (p. 12)

Mentor Program: An educational activity including advanced or in-depth work by an individual pupil in accordance with board policy under the direction of a non-certificated individual. Mentors shall be individuals selected in accordance with board criteria and subject to parental approval. (p. 11)

Suggestions for Staff Expertise and Training

Gifted Intervention Specialist/Gifted Coordinator

A gifted education program teacher or administrator should serve as a liaison to the mentor and act as an advocate for the gifted learner/mentee. This individual needs to be able to collaborate with mentors and students in providing appropriate services for gifted learners.

Mentor

Mentors who work with gifted learners should receive training in the characteristics and needs of gifted learners as well as training in being effective mentors with gifted learners. Mentors should be able to fulfill their obligations as a mentor, such as expertise in an area related to the student’s area of interest or ability and working with the student to accomplish their mentorship goals, any district participation criteria (i.e., security check, references, etc.).

Level of Cost/Efficiency

Based on cost and efficiency requirements for training and materials, the Mentorship setting is rated Low.

Literature and Research-based References


Abstract [ERIC]: This retrospective case study investigates the experiences of a highly gifted young artist and two mentors who guided his high school development. Examination of the mentors' influences on the artist's cognitive and affective development found that the mentorship validated the boy's style of thinking, sharpened metacognitive abilities, helped with career direction, and provided emotional support.


Abstract [ERIC]: This study evaluated a mentorship program which involved classroom instruction and actual mentorship experiences for gifted juniors and seniors. A survey of 103 former mentorship students found that the students derived numerous benefits from the mentorship program in the areas of personal, academic, and career development.

Abstract [ERIC]: This study investigated the perceived value (after several years) of a year-long independent study/mentorship course provided to 90 gifted high school students. Respondents reported that the course had improved their self-esteem; that the mentor was a significant influence and helped in "real life" learning; and that the course helped in career exploration, improving work skills, and preparing for college.


Abstract [ERIC]: Leadership behavior, creative ability, and dramatic skill of 54 school-age children and youth were rated by their teachers. Significant correlations were found between leadership and dramatic skills and between creativity and dramatic skills but not between leadership and creativity.


Abstract [ERIC]: Examines the role of mentors in providing individual tutoring and support in the field of creative writing. The organization of mentorship programs is explained and the Creative Arts Program, a two-level Singapore program that provides mentors to secondary and junior college students, is described.


Abstract [ERIC]: A study examined the mentorship experiences of three gifted underachieving male adolescents. Findings indicate that open-minded and nonjudgmental characteristics of the mentors were required to sustain an on-going relationship. A plan of strength- and interest-based strategies for intervention to reverse patterns of underachievement was implemented successfully in each case.


Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.

Practice-based Resources and Materials


Abstract [ERIC]: The current development of mentorship programs for gifted students at the Chinese University of Hong Kong is explained with examples from the search for potential mentors within the university community and a discussion of the development and operation of the mentorship program of Chinese creative writing for Hong Kong students.

Abstract [ERIC]: This paper describes mentorship programs for adolescents gifted in sciences and the creative arts in Singapore. Both programs operate under the WISE model, standing for Whole person development, Individual interests, Scholarship with support and supervised skills training, and Experiential exposure to expectations and demands in the field.


Abstract [ERIC]: The William and Mary Mentorship program for gifted and talented students in grades 8 through 11 matches student interests with selected college students for 1 semester. The program is in its fifth year of operation and has been evaluated through analysis of formative and summative data. Recommendations for implementing such a program are included.


Abstract [ERIC]: This article describes the Pinnacle Project, a weeklong mentorship program designed to cultivate extraordinary talents in young scholars by pairing them with an established master in his or her field of interest. Two essays by student participants discuss the power of a mentor and the benefits of the program.


Abstract [ERIC]: This article discusses methodologies for differentiating instruction for gifted students in regular social studies classes including curriculum compacting, conceptual thematic units, questioning strategies, interest development centers, independent study, and mentorship. Recommendations comply with performance expectations of the National Council for the Social Studies.


Electronic Emissary: http://emissary.wm.edu/

UConn Mentor Connection: http://www.gifted.uconn.edu/mentoruc.html
Other: International Baccalaureate

Description

*Other Service: Given that the above codes represent nearly all of the possible options for services allowed under OAC, use of this code should be rare, and is likely to generate a request for additional information from the district to document the nature of the “other service”.* (p. 12)

The International Baccalaureate Organization (IBO) is a non-profit educational organization established in 1968. The IBO offers three programs at the primary, middle and secondary levels. The Primary Years Programme (PYP) is designed for students aged 3-12, the Middle Years Programme (MYP) for students aged 11-16, and the Diploma Programme (DP) for students aged 16-19. The IB program focuses on international understanding through a rigorous curriculum structured to provide students with a global perspective on education. For more information, visit the International Baccalaureate Organization, http://www.ibo.org/ibo/index.cfm.

Suggestions for Staff Expertise and Training

*General Education Teacher*

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers working with gifted learners through the IB program need to complete the training for participation in the International Baccalaureate Program. These teachers also need to be able to differentiate curriculum and instruction for gifted learners. These teachers need initial and ongoing support to incorporate additional strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity within the IB curriculum.

*Gifted Intervention Specialist/Gifted Coordinator*

A gifted education program teacher or administrator should serve as a liaison to the coordinator of an IB program and act as an advocate for gifted learners participating in an IB program. This individual needs to be able to collaborate with other professionals in providing appropriate services for gifted learners within the structure of the IB program.

Level of Cost/Efficiency

Based on cost and efficiency requirements for training and materials, the Mentorship setting is rated Low.

Literature and Research-based References


Abstract [ERIC]: Six United World colleges and 45 secondary programs in the US offer two-year courses leading to the International Baccalaureate (IB). Designed to encompass grades 12 and 13, the programs focus on international understanding and high-level academic achievement. The IB program at Houston's Bellaire High School is described.

Abstract [ERIC]: This article compiles information from program web sites, articles, and interviews with experts to describe the history and current status of the Advanced Placement program and the International Baccalaureate program. The development of the Pre-AP program, the Primary Years program, and the Middle Years program is discussed.


Abstract [ERIC]: Suggests the International Baccalaureate Program (IB) as an alternative secondary program for gifted youth. After tracing the history of the IB program, comparing the IB program to other programs, and outlining the curriculum and requirements, the article shows how the IB meets the needs of gifted students.


Discussion of Advanced Placement (AP) programs as a talent development option for gifted high school students focuses on their rationale as an example of differentiated curriculum, benefits of advanced placement for these students, important issues in talent development such as quality instruction and models/mentors, special problems of AP classes, and persistent problems such as curricular coherence and grouping.

**Practice-based Resources and Materials**


Abstract [ERIC]: This article explores how the unique features of the International Baccalaureate (IB) Diploma program enable the cultivation of a school climate and culture that is conducive to the continued academic, cognitive, motivational, emotional, and social growth of a gifted adolescent. The content of the IB program is described.
Other: William and Mary Curriculum (advanced content model for grades 1-11)

Description

Other Service: Given that the above codes represent nearly all of the possible options for services allowed under OAC, use of this code should be rare, and is likely to generate a request for additional information from the district to document the nature of the “other service”. (p. 12)

The William and Mary curriculum materials for high ability learners are grounded in the Integrated Curriculum Model (VanTassel-Baska, 1986, 1995, 2002). The Integrated Curriculum Model (ICM) is designed to respond to gifted learners’ characteristics of precocity, intensity, and complexity through its three dimensions of advanced content, higher level processes and product development, and interdisciplinary concepts, issues, and themes. These areas represent the three best approaches to curriculum development and implementation documented in the literature for talented learners (Benbow & Stanley, 1983; Maker, 1982; Ward, 1981).

The ICM has been translated into a curricular framework and set of teaching units in the areas of science, language arts, and social studies. The advanced content dimension is addressed through literature selections two years beyond grade reading level in the language arts curriculum and by encouraging in-depth study of the selected content in the science units. Advanced content in the social studies curriculum is addressed through advanced reading materials, including many primary source documents, the use of secondary sources and historical fiction, and early introduction of advanced skills and ideas.

The process/product dimension is addressed by embedding the Elements of Reasoning developed by Paul (1992) and using a research model developed to aid students in generating original work (Boyce, 1997), the results of which are then presented through written and oral communication. The science curriculum addresses the process/product dimension by engaging students in the research process and through having students create their own experiments related to the unit content.

The issue/theme dimension of the framework focuses on change in the language arts units and in a few social studies units, cause and effect in other social studies units, and systems in other social studies units and in the science units. The science curriculum incorporates a problem-based learning approach that focuses on how science systems interact with real-world social, political, and economic systems.


Suggestions for Staff Expertise and Training

General Education Teacher

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers using the William and Mary curriculum need to be trained in the implementation of the curriculum units as well as in differentiating the curriculum for gifted learners who may need additional support or extension of the instructional activities. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity.

Gifted Intervention Specialist
Gifted Intervention Specialists should receive training in the William and Mary curriculum and in appropriate adaptations of the curriculum for high ability learners in their school district and within their district’s curriculum framework. Specialists also need training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners to supplement the content areas addressed by the William and Mary curriculum.

**Level of Cost/Efficiency**

Based on cost and efficiency requirements for training and materials, the William and Mary curriculum for high ability learners is rated Medium.

**Literature and Research-based References**


One of the curriculum development efforts of the Center for Gifted Education at the College of William and Mary has resulted in a problem-based learning science curriculum for high ability learners in grades kindergarten through grade eight. Professional development programs accompany the curriculum, which are designed to facilitate unit implementation and to enable educators to develop their own units. The purpose of this discussion is to analyze the use of problem-based learning as a catalyst for developing and implementing a curriculum that is both challenging and constructivist in its orientation. The authors compare problem-based learning with creative problem-solving and inquiry; explain how metacognition is linked to the approach of problem-based learning; and describe the PBL based inservice programs developed for teachers and administrators. Implications for implementing problem-based learning in classrooms for gifted learners conclude the discussion.


This article describes the findings of a review of existing K-8 science curriculum materials that was carried out under the National Science Curriculum Project for High-Ability Learners. Twenty-seven sets of materials were reviewed using criteria developed and refined by project staff. The purpose of the review was to ascertain whether currently available materials met the new standards in the teaching of science and the needs of gifted learners. The review findings suggest that existing basal textbooks fail to meet new science curriculum standards for all students, but particularly for high-ability learners. Modular programs and supplementary materials were found to be superior to basal textbooks on most dimensions.


A pilot survey study on the use of diagnostic assessment by teachers of gifted students provided a framework for examining how teachers use assessment information before and during their instruction. A questionnaire was given to a convenience sample of twenty-two teachers of gifted students and five program coordinators. Respondents indicated that about half of their school districts had a specific policy concerning a teacher’s use of standardized test scores for classroom
instructional decisions about individual students identified as gifted. About 75% indicated that teachers of gifted students typically use some type of diagnostic student assessment information in their teaching of specific content areas. The five most frequently identified assessment instruments were 1) content-based teacher made pretest; 2) portfolio assessment (writing, math, etc.); 3) standardized achievement test/subtest scores; 4) content-based textbook pretest; and 5) performance assessment (reading, speech, etc.). Findings suggest that diagnostic assessment is used by the majority of gifted programs sampled.


A review of three curriculum and instructional models used with gifted students suggests that models of: content (emphasis on learning skills and concepts within a discipline); process-product (emphasis on investigatory skills to develop "products"); and epistemological (focus on understanding and appreciation of knowledge systems) should be considered together in a comprehensive program.


This study employed the strategy of problem-based learning (PBL) as an embedded technique in a semester course on administration and policy in gifted education for 26 graduate students. In this study, PBL refers to a student-centered learning approach in which students are expected to assume responsibility for their own learning as they develop skills in higher-order thinking and self-directed learning under the guidance of a teacher in the role of facilitative tutor or coach. Student portfolios and questionnaires were used to assess the effectiveness of the PBL module over a 3-year period. Results yielded comparable positive findings from the various data sources included in the portfolios. The use of PBL provides an important framework for integrating classroom and work experiences for would-be school administrators.


The Integrated Curriculum Model includes the combination of advanced content, intra and interdisciplinary concepts, and products and processes conducive to higher level thinking. Using the model, strong longitudinal evidence of student achievement gains in science and language arts are noted.


The William and Mary science units were tested for effectiveness. Pre-post measures suggested student gains in science process skills and higher level thinking in science.

Using the Integrated Curriculum Model framework and graphic organizers that promote higher level thinking in the language arts, control and experimental students were assessed pre and post treatment using performance-based assessments in writing, grammar, and literary analysis. The students in the experimental group significantly improved in all three dimensions of the assessment and outperformed the control group.


Research-based curriculum models, based on effectiveness studies in science, social studies, and language arts are discussed based on the Integrated Curriculum Model and consequent effectiveness studies related to the model and curriculum for gifted students. A chapter with relevant examples for each core content area as well as an outline of the Integrated Curriculum Model are included.


This curriculum study of gifted-student learning in the language arts explores questions of curriculum efficacy related to the nature of the learner, the type of grouping model employed, and the strength of a curriculum treatment emphasizing literary analysis and interpretation and persuasive writing. The study further explores the use of curriculum effectiveness data to improve instruction the next time a unit of study is taught. Findings suggest that the curriculum treatment produces both significant and important learning outcomes for gifted students across 18 school district entities. Implications for further research and practice are highlighted.

**Practice-based Resources and Materials**

Center for Gifted Education. (1997-2005). William and Mary curriculum for high ability learners

Language Arts

*Beyond Words*
*Journeys and Destinations*
*Literary Reflections*
*Patterns of Change*
*Autobiographies*
*Persuasion*
*The 1940s: A Decade of Change*
*Utopia*
*Threads of Change in 19th Century American Literature*

Social Studies

*Ancient Egypt: Gift of the Nile*
*Ancient China: The Middle Kingdom*
*Building a New System: Colonial America 1607-1763*
*The World Turned Upside Down: The American Revolution*
*A House Divided?: The Civil War, Its Causes and Effects*
*The 1920s in America: A Decade of Tensions*
*The 1930s in America: Facing Depression*
Science

_Dust Bowl_
_Wat a Find_
_Acid, Acid Everywhere_
_Electricity City_
_Hot Rods_
_No Quick Fix_

Gallagher, S. A., Stepien, W. J., Sher, B. T., & Workman, D. (1995). Implementing problem-based learning in science classrooms. _School Science and Mathematics, 95_, 136-146. Many new curricular and instructional models must be developed or adapted as the nation moves towards educational reform in science classrooms. This article describes how problem-based learning, an innovative curricular and instructional model developed in medical graduate school programs, has been adapted for use in elementary and high school settings. Included in the integration of problem-based learning and science are components of all problem-based episodes including initiating learning with an ill-structured problem, using the problem to structure the learning agenda, and teacher as metacognitive coach, with important goals of a reformed science curriculum such as learning based on concepts of significance, student-designed experiments, and development of scientific reasoning skills.

Johnson, D. T., Poland, D. L., & Brown, E. F. (1998). _Middle school students moving forward with the new basics: Implementing the Chesapeake Bay unit_. Williamsburg, VA: Center for Gifted Education. This article provides insights into the alignment of the Center for Gifted Education's science unit, Chesapeake Bay, to the "new basics," from both education and business perspectives. Such topics as preparation for life-long learning, supporting national standards, documenting student growth, and engagement with learning comprise the foundation of the article. Illustrations from Ms. Wrightson's class provide more specific details regarding the Chesapeake Bay unit's student and teacher activities and its alignment with the "new basics."

Sher, B. (1992). _Developing a scope and sequence in science for high ability learners K-8_. _Developing science curriculum for high ability learners K-8_. Williamsburg, VA: Center for Gifted Education, College of William and Mary. This monograph describes the development of a scope and sequence model for science education specifically intended for use with gifted students in grades K-8. Introductory material notes the rationale and purpose of the model as well as its functions such as providing a scaffolding linking educational concepts with the technology of school curriculum. The three stages of the 21-month project are outlined. Instructional emphases of the curriculum are: (1) scientific habits of mind; (2) critical/productive thinking skills; and (3) metacognitive skills. Ways to further differentiate the curriculum are suggested, such as varying the level of the outcome and varying the sophistication of the content. Desired outcomes are grouped into generic concept outcomes and scientific process outcomes with associated assessment indicators. Specific outcomes are listed by approximate grade level for concepts; content applications (in biology, earth science,
physical science); interdisciplinary applications (social systems, number systems, cities as systems, language, political systems, economic systems); the scientific process; problem-based learning; technology (computer, camera, and calculator skills); scientific habits of mind (stressing curiosity, creativity, objectivity, openness to new ideas, and skepticism); critical/productive thinking skills; and metacognitive strategies (planning, monitoring, assessing). Guidelines for using the model for unit development are also offered.

VanTassel-Baska, J. (1994). *A curriculum framework in language arts for high ability learners K-8*. Williamsburg, VA: Center for Gifted Education, College of William and Mary. This curriculum framework provides a model for developing appropriate and meaningful language arts curricula for high ability learners in kindergarten through grade 8. It is intended as a guide to making decisions about traditional curricular emphases within the language arts areas of reading, writing, speaking, and listening, as well as nontraditional areas like thinking, multiculturalism, and technology. The curriculum development guide discusses: issues in developing learner outcomes; current language arts learning objectives specified by state guides; learner outcomes in the concept, content, and process dimensions; and interdisciplinary applications through project work. Four goals are presented, each accompanied by learner outcomes and archetypal activities for high ability students in language arts. The goals include: to develop analytical and interpretative skills in literature, to develop persuasive writing skills, to develop linguistic competency, and to develop listening/oral communication skills. Several performance assessment protocols for language arts are provided. An annotated list of 37 exemplary resources for teaching language arts to high ability learners concludes the guide.

VanTassel-Baska, J. (2003). *Curriculum planning and instructional design for gifted learners*. Denver, CO: Love. This book provides practical applications regarding how to write and plan curriculum and instruction using standards-based instruction aligned with gifted programming. Scope and sequence development, curriculum planning, instructional delivery modes, and approaches for modifying standards are included using a planning model and an instructional model. The planning model acknowledges the important roles of curriculum planners, of task analysis, and of the educational climate of a school. The instructional model emphasizes the characteristics of gifted learners, philosophy and goals, student goals, learner outcomes, and classroom implementation.
Ohio Comprehensive Continuum of Services Project
Descriptions of Placement and Service Models and Descriptions of Instructional Strategies

Part II: Descriptions of Instructional Strategies

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Focus on broad based issues
Focus on themes or problems
Multidisciplinary study
Curriculum compacting
Methods to stimulate high level thought, including critical thinking, divergent thinking, abstract thinking, logical reasoning, and problem solving
Oral, written, and artistic expression
Independent study and research methods
In-depth study of a topic through open-ended tasks
In-depth study of a topic through products that reflect complex abstract, and/or higher level thinking skills
Other: Diagnostic-prescriptive curriculum and instruction
Other: Problem-based learning
## Overview of Instructional Strategies and Models

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</table>
| **Replacement or extension of the regular curriculum** | • Gardner, 1999  
• Kaplan, 1986  
• Kaplan, 2003  
• Renzulli, 2001b  
• Stronge, 2002  
• Tomlinson, 1995  
• Tomlinson, 2000  
• Tomlinson, 2001  
• Tomlinson, 2004  
• VanTassel-Baska, 1997  
• VanTassel-Baska & Brown, 2005 | • Hertzog, 1995  
• Hertzog, 1998  
• Reis, Westberg, et al., 1998  
• Renzulli & Reis, 2003  
• Rogers, 1998: ES = .83  
• VanTassel-Baska, Avery, Little, & Hughes, 2000 | • Avery & Zuo, 2003  
• Baker & Schacter, 1996  
• Halstead, 2002  
• Johnson, Boyce, & VanTassel-Baska, 1995  
• Kaplan, 2005  
• Karnes & Bean, 2005  
• National Association for Gifted Children, 1998  
• Purcell, Burns, Tomlinson, Imbeau, & Martin, 2002  
• Reis, Burns, & Renzulli, 1992  
• Renzulli, Leppien, & Hays, 2000  
• Renzulli & Reis, 2003  
• Riley, 2005  
• Rogers, 2002  
• Tomlinson, 2002  
• Tomlinson & Cunningham-Eidson, 2003a, 2003b  
• Tomlinson, Kaplan, Renzulli, Burns, Leppien, & Purcell, 2001  
• VanTassel-Baska, 2003  
• VanTassel-Baska, 2004  
• VanTassel-Baska & Little, 2003  
• VanTassel-Baska & | High | General Education Teacher:  
- characteristics and needs of gifted learners  
- various differentiation strategies for curriculum and instruction  
- training in collaborating with other classroom teachers  
Gifted Intervention Specialist:  
- characteristics and needs of gifted learners  
- creating and adapting curriculum for high ability learners  
- various enrichment and acceleration strategies  
- training in collaborating with classroom teachers |
| Focus on broad based issues | Gallagher, 1997  
Gallagher, 2000  
Elder & Paul, 2003  
Elder & Paul, 2004a, 2004b  
Foundation for Critical Thinking  
Kaplan, 2005 | Stambaugh, 2006  
Winebrenner, 2003 | Medium | General Education Teacher:  
- characteristics and needs of gifted learners  
- various differentiation strategies for curriculum and instruction focused on broad-based issues  
- training in collaborating with other classroom teachers  
Gifted Intervention Specialist:  
- characteristics and needs of gifted learners  
- creating and adapting curriculum for high ability learners focused on broad based issues  
- collaborate with classroom teachers |
|---|---|---|---|---|---|---|
| Focus on themes or problems | Clark, 1989  
Gallagher, 1997  
Gallagher, 2000  
Riley, 1997  
VanTassel-Baska, 1986 | VanTassel-Baska, Bass, Ries, Poland, & Avery, 1998  
Gallagher et al., 1992  
Gallagher & Stepien, 1996 | Center for Gifted Education. (1997-2005). William and Mary curriculum for high ability learners: Science  
Smutny, 2000  
Swartz, 1991 | Stambaugh, 2006  
Winebrenner, 2003 | Medium | General Education Teacher:  
- characteristics and needs of gifted learners  
- various differentiation strategies for curriculum and instruction focused on themes or problems  
- training in collaborating with other classroom teachers  
Gifted Intervention Specialist:  
- characteristics and needs of gifted learners  
- creating and adapting curriculum for high ability learners focused on themes or problems  
- collaborate with classroom teachers |
Lyublinskaya, 1997 | Stambaugh, 2006  
Winebrenner, 2003 | Medium | General Education Teacher:  
- characteristics and needs of gifted learners |
| Curriculum Compacting | • Reis & Renzulli, 1992  
• Westberg & Daoust, 1994 |
|-----------------------|-------------------------|
| A. Reis & Purcell, 1993  
B. Reis & Westberg, 1994  
• Reis, Westberg, et al., 1998  
• Rogers, 1998: ES = .83 |
| • Bailey, 1992  
• Coleman, 2003  
• Delisle, 1995  
• Kennedy, 1995  
• Ries, Burns, & Renzulli, 1992  
• Renzulli & Reis, 2003  
• Riley, 2005  
• Tomlinson, 1995  
• Tomlinson, 2001  
• Troxclair, 2000  
• Westberg, 1995  
• Winebrenner & Berger, 1994  
• Winebrenner, 2002  
• Winebrenner, 2003 |
| High |

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<th>Methods to stimulate high level thought, including critical thinking, divergent</th>
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<th>Critical Thinking</th>
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| • Anderson & Krathwohl, 2001  
• Carr, Alexander & Schwanenflugel, 1996  
• Hannah & Shore, 1995  
• Paul & Elder, 2002  
• Steiner & Carr, 2003 |
| • Rogers, 1998: Critical Thinking, ES = .44  
• VanTassel-Baska, Little, Avery, & Hughes, 2000 |
| • Center for Gifted Education, 1997-2005  
• Elder & Paul, 1998  
• Elder & Paul, 2003  
• Elder & Paul, 2004a, 2004b  
• Foundation for Critical |
| High |

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<tr>
<th>General Education Teacher:</th>
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</table>

- various differentiation strategies for curriculum and instruction through multidisciplinary study  
- training in collaborating with other classroom teachers  
- characteristics and needs of gifted learners  
- creating and adapting curriculum for high ability learners focused on multidisciplinary study  
- collaborate with classroom teachers  

Gifted Intervention Specialist:  
- characteristics and needs of gifted learners  
- creating and adapting curriculum for high ability learners using curriculum compacting strategies  
- various differentiation strategies to replace curriculum goals students have mastered or compacted  
- training in collaborating with other classroom teachers  

Gifted Intervention Specialist:  
- characteristics and needs of gifted learners  
- creating and adapting curriculum for high ability learners using curriculum compacting strategies  
- collaborate with classroom teachers  

High General Education Teacher:  
- characteristics and needs of gifted learners  
- developing and applying curriculum compacting strategies  
- various differentiation strategies to replace curriculum goals students have mastered or compacted  
- training in collaborating with other classroom teachers  

Gifted Intervention Specialist:  
- characteristics and needs of gifted learners  
- creating and adapting curriculum for high ability learners using curriculum compacting strategies  
- collaborate with classroom teachers  

High General Education Teacher:  
- characteristics and needs of gifted learners  
- various differentiation strategies related to developing and using higher level thinking skills, such as critical thinking, divergent thinking,
| thinking, abstract thinking, logical reasoning, and problem solving | Creative Thinking  
- Torrance & Goff, 1989  
- Treffinger, 1991  
- Treffinger, 1995  
- Treffinger, 1998  
  Creative Problem Solving/Future Problem Solving  
- Feldhusen, 1995  
- Feldhusen & Clinkenbeard, 1986 | Creative Thinking  
- Meador, 1994  
- Okabayashi & Torrance, 1984  
- Rogers, 1998: Creative Thinking ES=.32  
- Sternberg, Torff, & Grigorenko, 1998  
- Treffinger, 1986 | Creative Thinking  
- Guilford Higher-Order questioning model  
- Schlichter & Palmer, 1993  
  Creative Thinking  
- Destination Imagination  
- De Bono, 1999  
- Schlichter & Palmer, 1993  
- Soriano de Alencar, 1993  
- Springfield, 1986  
  Creative Problem Solving/Future Problem Solving  
- Daupert, 2002  
- Draze, 1986  
- Eberle & Stanish, 1997  
- Eberle & Stanish, 1996  
- Elwell, 1993  
- Firestien & Treffinger, 1983  
- Firestien & Treffinger, 1989  
- McAuliff & Stoskin, 1987  
- Myers & Torrance, 2003  
- Puccio, Keller-Mathers, & Treffinger, 2000  
- Saxon, Treffinger, Young & Wittig, 2003  
- abstract thinking, logical reasoning, and problem solving  
- training in collaborating with other classroom teachers  
  Gifted Intervention Specialist:  
- characteristics and needs of gifted learners  
- creating and adapting curriculum for high ability learners using critical thinking, divergent thinking, abstract thinking, logical reasoning, and problem solving skills  
- collaborate with classroom teachers  |
|---|---|---|---|---|
- Kendrick, 1998  
- Porath, 1993 | Berman, 2003  
- Bernal, 2003  
- Black, 1998  
- Gross, 1998  
- Hall, 1990  
- Hefner & McGill, 1990  
- Herman & Kirschenbaum, 1990  
- Khatena & Khatena, 1999  
- Berman, 2003  
- Bernal, 2003  
- Black, 1998  
- Gross, 1998  
- Hall, 1990  
- Hefner & McGill, 1990  
- Herman & Kirschenbaum, 1990  
- Khatena & Khatena, 1999 | Medium | General Education Teacher:  
- characteristics and needs of gifted learners  
- various differentiation strategies to incorporate oral, written, and artistic expression in the academic curriculum  
- training in collaborating with other classroom teachers |
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<tr>
<th>Independent study and research methods</th>
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<td>• Gagne, 1995</td>
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<td>• Renzulli &amp; Reis, 2003</td>
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<td>• VanTassel-Baska &amp; Brown, 2005</td>
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<td>• Hébert, 1993</td>
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<td>• Hertzog, 1995</td>
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<td>• Moon, Feldhusen &amp; Dillon, 1994</td>
<td>- collaborate with other educators</td>
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<td>• Rogers, 1998: ES = 0 (Difficult to measure based on specific content studied)</td>
<td>- training in implementation of independent study and research methods with gifted learners</td>
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<td>• Betts &amp; Neihart, 1986</td>
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<td>• Johnsen &amp; Johnson, 1986</td>
<td>Gifted Intervention Specialist:</td>
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<td>• Parker &amp; Begnaud, 2003</td>
<td>- characteristics and needs of gifted learners</td>
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<td>• Winebrenner, 2003</td>
<td>- creating and adapting curriculum for high ability learners using independent study and research methods</td>
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<td>General Education Teacher:</td>
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<td>• Betts Neihart, 1986</td>
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<td>• Center for Gifted Education, 2000</td>
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<tr>
<td>• Johnsen Johnson, 1986</td>
<td></td>
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<td>• Parker Begnaud, 2003</td>
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<tr>
<td>• Winebrenner, 2003</td>
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<tr>
<td>In depth study of a topic through open-ended tasks</td>
<td>Methodologies</td>
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</table>
| • Hertzog, 1995  
• Hertzog, 1998 |  
• Betts & Neihart, 1986  
• Tomlinson, 2002  
• Winebrenner, 2003 | - training in implementation of in-depth study of a topic through open-ended tasks  
- various differentiation strategies that relate to using open-ended tasks with gifted learners  
- training in collaborating with other classroom teachers | - characteristics and needs of gifted learners |
|  
Low Gifted Intervention Specialist: |  
- characteristics and needs of gifted learners  
- creating and adapting curriculum related to using open-ended tasks with gifted learners  
- training in collaborating with other classroom teachers | - characteristics and needs of gifted learners |

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<tr>
<th>In depth study of a topic through products that reflect complex abstract, and/or higher level thinking skills</th>
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<th>Characteristics and needs of gifted learners</th>
<th>Low General Education Teacher:</th>
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| • Carr, Alexander, & Schwanenflugel, 1996  
• Hannah & Shore, 1995 |  
• Bailey, 2000  
• Bishop, 2000 |  
• Bailey, 1992  
• Betts & Neihart, 1986  
• Center for Gifted Education, 2000  
• Troxclair, 2000 | - characteristics and needs of gifted learners  
- various differentiation strategies related to developing and using higher level thinking skills  
- able to assess multiple types of products for content knowledge and application of higher-level thinking skills  
- collaborate with other classroom teachers |
|  
Low Gifted Intervention Specialist: |  
- characteristics and needs of gifted learners  
- creating and adapting curriculum related to using open-ended tasks with gifted learners  
- training in collaborating with other classroom teachers | - characteristics and needs of gifted learners |
### Other: Diagnostic-Prescriptive Curriculum and Instruction

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<tr>
<td>Feldhusen, Van Winkle, &amp; Ehle, 1996</td>
<td>- various differentiation strategies to replace curriculum goals students have mastered and accelerate students at an appropriate pace</td>
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<tr>
<td>Passow &amp; Frasier, 1996</td>
<td>- training in collaborating with other classroom teachers</td>
</tr>
<tr>
<td>Southern &amp; Jones, 1991</td>
<td></td>
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<tr>
<td>Ablard, Mills, &amp; Duvall, 1994</td>
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<tr>
<td>Reis, Westberg, Kulikowich, &amp; Purcell, 1998</td>
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<td>Swiatek, 1993</td>
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<td>Corazza, Gustin, &amp; Edelkind, 1995</td>
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<td>Johnsen, 2005</td>
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<td>Kress, 1994</td>
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<td>Lupkowski, Assouline, &amp; Stanley, 1990</td>
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<td>Reis, Burns, &amp; Renzulli, 1992</td>
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<td>Tomlinson, 2001</td>
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<td>VanTassel-Baska, 2004</td>
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<td>Winebrenner, 2003</td>
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### Other: Problem-Based Learning

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<td>Gallagher, 2000</td>
<td>- creating and implementing, or adapting, curriculum units using problem-based learning</td>
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<tr>
<td>VanTassel-Baska, Bass, Ries, Poland, &amp; Avery, 1998</td>
<td>- various differentiation strategies</td>
</tr>
<tr>
<td>Gallagher, Stepien, &amp; Rosenthal, 1992</td>
<td>- training in collaborating with other classroom teachers</td>
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<tr>
<td>Gallagher &amp; Stepien, 1996</td>
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<tr>
<td>Center for Gifted Education. (1997-2005), William and Mary curriculum for high ability learners: Science</td>
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### Other: Problem-Based Learning

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<td>VanTassel-Baska, Bass, Ries, Poland, &amp; Avery, 1998</td>
<td>- various differentiation strategies</td>
</tr>
<tr>
<td>Gallagher, Stepien, &amp; Rosenthal, 1992</td>
<td>- training in collaborating with other classroom teachers</td>
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<td>Gallagher &amp; Stepien, 1996</td>
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<td>Center for Gifted Education. (1997-2005), William and Mary curriculum for high ability learners: Science</td>
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Instructional Strategies
Replacement or Extension of Regular Curriculum

Description
The replacement or extension of the regular grade-level curriculum is based on the assumption that gifted learners demonstrate advanced readiness for learning through an accelerated rate of learning, the ability to handle abstract or complex ideas, and the ability to work through challenging problems or to create innovative solutions with less teacher support than many of their same-age peers. This instructional model encompasses several strategies (i.e., curriculum compacting, independent study, open-ended tasks, diagnostic-prescriptive instruction, etc.) based on the purpose of learning and pre-assessment of the student(s) involved.

Suggestions for Staff Expertise and Training

General Education Teacher
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers replacing or extending the regular curriculum for gifted learners need to be able to differentiate the curriculum for gifted learners. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity that is connected to the regular curriculum through the learning purpose.

Gifted Intervention Specialist
Gifted Intervention Specialists should be able to train and support General Education teachers in their differentiation of curriculum for gifted learners. Specialists also need training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners based on the program model used within the district.

Level of Cost/Efficiency
Based on cost and efficiency requirements for training and materials for all General Education teachers and Gifted Intervention Specialists, the replacement or extension of the regular curriculum for high ability learners is rated High.

Literature and Research-based References
Garner suggests eight intelligences that students may possess. These intelligences would form the basis for identifying individual differences and curriculum planning and development.

Abstract [ERIC]: This study examined the impediments a new private secular school with students working at above grade level encountered in it implementation of a project-based curriculum within the context of constructivist theory. Examined were the intended or formal curriculum, its implementation, and effects on the implementation. Data were gathered by observing classrooms, attending board and curriculum committee meetings, and interviewing students, teachers, and parents. The curriculum of the school promised learning that was real,
contextual, and engaging. One impediment to forming the curriculum was differing perceptions between parents and board members about its form. Parents also showed concern over differentiation in instruction and wanted their children to receive challenging work. Also, parents who wanted specific subjects emphasized were not realizing the intended goals of integrated learning activities. Systems of structure were imposed on the curriculum, including structure in the physical environment, scheduling of content, time use, and teacher responsibilities. With an open curriculum, the teachers had a greater influence on structure than when it is set by outside goals or standards. The largest discrepancy between intended and implemented curriculum was the dichotomy between project-based, integrated curriculum and academic or subject-based curriculum. An appendix of research records is included.


Abstract [ERIC]: Explored the meaning of curricular differentiation for 11 gifted elementary school students by examining responses to open-ended activities. Participants' responses differed from typical students. Differentiation occurred by participants responding in more depth, with higher level skills, and in ways that were guided by their learning styles.


Abstract [ERIC]: Inappropriate expectations, insufficient instructional time, and lack of a support system erode the positive effects of gifted program inservice opportunities. Alternative training experiences are described which emphasize teacher-to-teacher rather than consultant-to-group interaction; focus on a specific objective reinforced by several inservice activities over time; and involve teachers voluntarily.


Abstract [ERIC]: This article argues that there is not a gifted-child pedagogy, but rather a repertoire of instructional practices from which teachers can select the most appropriate. It stresses the need to determine the appropriate pedagogy by weighing factors, such as the nature of the content, subject matter, students' needs, and context.


Findings from this national study suggest that when the curriculum is compacted and 40-50% of the curriculum is eliminated for gifted students, their standardized achievement test scores do not differ significantly from those students who did not receive the opportunity for compacting.


Renzulli suggests that developers of standards need to be guided by the following considerations in order to meet the needs of gifted students and not hold students back: 1) Standards must be benchmarked so that a continuum from minimal to advanced levels of accomplishment is apparent; 2) Developers need to “take into account who should be responsible for determining what should be taught and long term consequences” (p. 140); 3) Pedagogy should be left up to
the teacher; and 4) Developers must consider the implications that standards will have on assessment and accountability.


This chapter outlines the research evidence and “how-to” applications of the Schoolwide Enrichment Model, including how students may explore and research areas of interest after compacting out of content already known.


Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.


Based on a synthesis of research on highly effective teachers, Stronge found that the most effective educators must show efficacy of content knowledge in the fields they teach as well as a variety of pedagogical strategies. Additionally, rather than look at outside factors like demographics, district leadership, and state mandates, Stronge focuses specifically on what teachers can control: their own preparation, personality, and practices. This book shares how effective teachers establish, manage, and maintain learning-focused classroom environments, organize time, communicate expectations, and plan instruction, present curriculum to support active and engaged learning, and monitor student progress, identify student potential, and meet the needs of special populations in the classroom.


Abstract [ERIC]: This brief paper summarizes guidelines for adapting instruction for advanced learners in inclusive, mixed-ability middle school classrooms. A rationale for differentiating instruction is followed by consideration of what differentiation is and is not. Characteristics of a differentiated class are enumerated, including: instruction is concept focused and principle driven, on-going assessment of student readiness and growth are built into the curriculum, and flexible grouping is consistently used. Suggested ways to differentiate instruction are grouped into interest-based adjustments, adjustments based on learning profile, and readiness-based adjustments. These last adjustments involve offering students a range of learning tasks developed along eight continua as follows: (1) concrete to abstract, (2) simple to complex, (3) basic to transformational, (4) fewer facets to multi-facets, (5) smaller leaps to greater leaps, (6) more structured to more open, (7) less independence to greater independence, and (8) slower to quicker. Suggested strategies for managing a differentiated classroom include: use of multiple texts and supplementary materials, interest centers, learning contracts, compacting, and group
investigation. Teachers are urged to prepare students and parents for a differentiated classroom, attend to issues of classroom structure and management, and plan with team members and other colleagues interested in differentiation.

This article provides a rationale for how standards and differentiation align. Standards can serve as a foundation for all learners but how teachers present information as well as the level of depth or pacing provided can be differentiated.

This article outlines what differentiated instruction should look like in the regular classroom for all students and how that is differentiated for the gifted learner based on a content, process, product orientation to curriculum differentiation based on learner interests, ability, and learning preferences.

Seminal research articles from *Gifted Child Quarterly*, a peer-reviewed journal from the National Association for Gifted Children, are compiled on differentiation. Included are articles on the effectiveness of curriculum compacting, the effects of staff development, case studies of best practices for gifted students, and other pedagogical strategies.

Several strategies can be used to promote educational excellence. These include establishing supportive mission statements, building appropriate curriculum resources and materials, individualizing instruction to optimize student learning and providing leadership models. These strategies can also be supplemented through parent and community involvement. This article defines the difference between equity and excellence and how differentiation of curriculum should include high standards for all students but will look different for different ability levels.

Based on focus groups, interviews, documents, and classroom observations of schools implementing the William and Mary language arts and science curricula it was found that students, teachers, parents, and administrators observed increased student engagement in class, enhanced reasoning skills, and the improvement of habits of mind.

This chapter outlines an analysis study of curriculum model comparisons including the Integrated Curriculum Model, the Schoolwide Enrichment Model, Schlichter Model for Talents Unlimited, Sternberg’s Triarchic Model, Gardner’s Multiple Intelligence Model, Betts’
Autonomous Learner Model, The Kaplan Grid, the Purdue Three-Stage Enrichment Model, and others. Comparisons regarding the research base, curriculum, teacher training, ease of implementation, and student effectiveness data are listed.

**Practice-based Resources and Materials**


This chapter provides specific selection criteria for determining resources for gifted students and also lists suggested curriculum or supplemental resources in each content area that could be utilized by educators working with gifted learners.


This article describes two major strategies for developing standards to assess complex student performances: discussion, analysis, and agreement of teachers and other curriculum experts about criteria and the examination of what experts do. The authors suggest that based on the two major strategies, standards might be developed one or two grades ahead of the grade being assessed.


This book outlines the importance of bibliotherapy for gifted students and suggests books appropriate for gifted learners based on their social-emotional/affective needs, characteristics, cognitive abilities, and interests. A reading list for varied grade levels is included.


This article describes the findings of a review of existing K-8 science curriculum materials that was carried out under the National Science Curriculum Project for High-Ability Learners. Twenty-seven sets of materials were reviewed using criteria developed and refined by project staff. The purpose of the review was to ascertain whether currently available materials met the new standards in the teaching of science and the needs of gifted learners. The review findings suggest that existing basal textbooks fail to meet new science curriculum standards for all students, but particularly for high-ability learners. Modular programs and supplementary materials were found to be superior to basal textbooks on most dimensions.


Kaplan’s Grid uses the process, content, product relationship to define differentiation and to use as a developmental framework for curriculum planning. Using a layered approach, Kaplan describes how to differentiate the core curriculum.
Based on recent research in the field of gifted education, chapter authors write about their research, theories, and expertise in the provision of instruction, management, and curriculum strategies for gifted learners. Relevant chapters (Section II & III of the text), written by various authors, include unit writing, curriculum analysis, process skills, product development, teaching critical thinking, problem-based learning, creative thinking, research skills, leadership, and mentoring.


The National Association for Gifted Children suggests program standards in seven areas including program design, identification, program evaluation, curriculum and instruction, program administration and management, social-emotional guidance and counseling, and professional development. The program standards suggest considering issues outside the field of gifted education (e.g., standards) and also recommend a continuum of services with individualized differentiated education plans for gifted students.


Research on the quality of educational standards, our knowledge about the quality of textbooks, and the performance of high-achieving students on international assessments all point to the need for exemplary curricula for gifted and talented young people. The gap between research in these areas and the needs of gifted and talented learners is startlingly clear. This article includes information about the development of a rubric that was originally designed to assess the quality of curricular units that are submitted annually to the National Association for Gifted Children (NAGC) Curriculum Division’s Curriculum Competition. The article also includes information about 4 different, but related, uses for the rubric. Ultimately, we hope that the use of this tool and assessment technique by practitioners across the country will begin to close the enormous gap between the learning needs of gifted and talented young people and curricula.


This book provides strategies and forms as well as a rationale for teachers to compact the curriculum based on student pre-assessments. Once students demonstrate mastery of a given topic through pre-assessment options, students are provided contracts or individual plans for independent study opportunities.


Based on constructivist learning theory, The Multiple Menu Model presents six practical menus that guide curriculum developers as they bring together an understanding of a discipline, its content and methodologies, and a vast array of instructional techniques. Teachers have
successfully used this approach to challenge learners on all levels and make learning more meaningful, relevant, and engaging.


This chapter outlines the research evidence and “how-to” applications of the Schoolwide Enrichment Model, including how students may explore and research areas of interest after compacting out of content already known. Research-based evidence using Type I, II, and III investigations is documented within the chapter citing achievement gains, life production, and positive student attitudes toward self and school.


This chapter outlines why differentiation is important and provides educators with how to decide on materials that are differentiated for gifted learners, including for selection, how to search for materials, how to find free and inexpensive materials, and a list of teacher resources, publishing companies, and websites that will assist them with differentiation.


Research, best practice, and experiential wisdom from the field of gifted education are shared in this how-to book on instructional and management strategies that work in gifted education, based on Rogers’ analyses of the research in gifted education. Topics include acceleration, enrichment, grouping, independent study, educational plans, extracurricular options, and monitoring student progress. An emphasis is on how programs in gifted education should be matched to the child’s individual strengths.


This article describes how teachers can modify lessons that meet the varied learner needs based on interest, readiness, and/or learning profiles of students. Considerations and accommodations should be made for all ability levels as well as individual learning interest and styles.


Both of these books outline how to differentiate instruction for specific grade levels, as indicated using tiered lessons as a basis for instruction and grouping students based on interest, readiness, and/or learning profiles. Specific lesson plans for each core content are shared with examples of how teachers can not only plan but manage a differentiated classroom.
The four parallel approaches to curriculum development illustrate ascending intellectual demand as a means of extending the intensity of challenge for students as they work toward expertise in learning. The book provides practical guidelines for developing curriculum that ensure rich curriculum for all learners. The basis of the model incorporates four dimensions that can be used singly or in combination: the core curriculum, the curriculum of connections, the curriculum of practice, and the curriculum of identity. The core curriculum is meant to be a basis for all other dimensions.

This book provides practical applications regarding how to write and plan curriculum and instruction using standards-based instruction aligned with gifted programming. Scope and sequence development, curriculum planning, instructional delivery modes, and approaches for modifying standards are included using a planning model and an instructional model. The planning model acknowledges the important roles of curriculum planners, of task analysis, and of the educational climate of a school. The instructional model emphasizes the characteristics of gifted learners, philosophy and goals, student goals, learner outcomes, and classroom implementation.

This teacher-friendly book outlines the rationale for acceleration, the types of acceleration, and provides various usable forms and examples of ways teachers can collapse the curriculum, use diagnostic-prescriptive teaching, write written education plans tailored to student needs, and effectively document and proactively plan for gifted children’s growth and acceleration in school.

Research-based curriculum models, based on effectiveness studies in science, social studies, and language arts are discussed based on the Integrated Curriculum Model and consequent effectiveness studies related to the model and curriculum for gifted students. A chapter with relevant examples for each core content area as well as an outline of the Integrated Curriculum Model are included.

This chapter outlines specific assumptions regarding curriculum development and provides examples for educators and leaders to modify or write curriculum specific to gifted learners. A process of planning, needs assessment, curriculum development teams, curriculum development approaches, field testing, implementation, evaluation, and revisions is explained as part of the overall process. In addition, curriculum goals and outcomes specific to gifted learners are suggested.
This teacher-friendly book provides forms, templates, and examples of ways teachers can pre-assess student learning and provide alternate activities based on student interest. Five-most difficult first strategies as well as curriculum compacting approaches are emphasized along with student contracts and menus.
Focus on Broad Based Issues

Description
Instruction that focuses on broad based issues uses other instructional strategies such as the critical thinking process, independent study, and the research process to examine issues related to the regular curriculum or to students’ interests. Focusing on broad issues provides gifted learners with an open-ended opportunity to explore multiple points of view, to critically examine the underlying assumptions and beliefs of different perspectives, and to develop an understanding of the relationship between disciplines or fields of practice (i.e., environmental preservation and its relationship to healthcare, the economy, government, etc.).

Suggestions for Staff Expertise and Training

General Education Teacher
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers implementing a curriculum for gifted earners that focuses on broad based issues need to be able to differentiate the curriculum for gifted learners through multiple instructional strategies (i.e., critical thinking, interdisciplinary curriculum, etc.). These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity.

Gifted Intervention Specialist
Gifted Intervention Specialists should be able to train and support General Education teachers in their differentiation of curriculum for gifted learners through a focus on broad based issues. Specialists also need training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners based on the program model used within the district.

Level of Cost/Efficiency
Based on cost and efficiency requirements for training and materials for all teachers that provide gifted education services, instructional strategies for high ability learners that focus on broad based issues are rated Medium.

Literature and Research-based References

Abstract [ERIC]: Review of problem-based learning (PBL) finds that innovation is comprised of four elements: an ill-structured problem, substantive content, student apprenticeship, and self-directed learning. Research evidence suggests that PBL is better than traditional instruction on long-term information retention, conceptual understanding, and self-directed learning. Application of the method in classes for gifted students is addressed.

Abstract [ERIC]: How can high schools counteract deterrents to achievement that disadvantaged students face? "Project P-BLISS: Problem-Based Learning in the Social Sciences" presents
"hidden" disadvantaged gifted students with a curriculum that first captures their interest and challenges them to realize their true potential.

Gallagher, S. A., & Stepien, W. (1996). Content acquisition in problem-based learning: Depth versus breadth in American studies. *Journal for the Education of the Gifted, 19*, 257-275. One hundred sixty seven high school students’ scores on multiple-choice standardized tests were compared after traditional and experimental instruction. In the experimental curriculum students used data and varying perspectives to resolve problems related to a variety of dilemmas such as the Salem witch trials, the use of the nuclear bomb on Hiroshima, and so on. Results indicated that students in problem-based learning classes did not sacrifice content acquisition in American Studies when compared to students learning in more traditional settings.


This book outlines core skills of effective thinking and metacognition so one may analyze his/her own though processes and understand how people think, including the types of thinking and levels of thinking that take place in a given situation. These skills can easily be applied to the classroom and instruction as educators may apply these skills to analyze student responses and questions and ask more difficult questions in the classroom as well.

**Practice-based Resources and Materials**


Kaplan’s Grid uses the process, content, product relationship to define differentiation and to use as a developmental framework for curriculum planning. Using a layered approach, Kaplan describes how to differentiate the core curriculum.


Abstract [ERIC]: Stresses that critical thinking is more than a set of skills; it also involves intellectual traits that should be cultivated. These traits include intellectual humility, courage, empathy, integrity, and perseverance; faith in reason; and fair-mindedness. Self-questioning is an important means of developing these traits.


This booklet provides open-ended question stems based on logic across disciplines. Rubrics to analyze thinking are also provided based on the scaffolding of reasoning through events or situations by determining the central purpose or question at issues, gathering information or data, examining inferences and interpretations based on data, understanding assumptions of others and self, and recognizing other points of view and the implications and consequences of actions.

This booklet provides examples of ways teachers can ask analytic and evaluative type questions across academic disciplines and teach children how to question for self-knowledge and self development. Models for Socratic questioning are included.


This booklet explains how the human mind works and how thinking happens. Questions surrounding clarity, depth, breadth, accuracy, points of view, perceptions, and implications are emphasized.

Focus on Themes or Problems

Description
Instruction that focuses on themes or problems uses other instructional strategies such as critical thinking, independent study, and the research process to examine themes related to the regular curriculum or to students’ interests. Focusing on themes or problems responds to the advanced learner readiness of gifted learners by encouraging critical reasoning and creating connections between disciplines and fields, responding to gifted learners’ readiness for complexity and challenge. Structuring curriculum to focus on a theme (i.e., humankind and their relationship with their environment) or problem (i.e., land use and development) and incorporating multiple content areas requires gifted learners to learn at a greater depth and to incorporate multiple areas of knowledge and skill when seeking possible solutions.

Suggestions for Staff Expertise and Training

General Education Teacher
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers implementing a curriculum for gifted learners that focuses on issues or problems need to be able to differentiate the curriculum for gifted learners through multiple instructional strategies (i.e., critical thinking, interdisciplinary curriculum, etc.). These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity within a curriculum centered on themes or problems.

Gifted Intervention Specialist
Gifted Intervention Specialists should be able to train and support General Education teachers in their differentiation of curriculum for gifted learners through a focus on themes or problems. Specialists also need training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners based on the program model used within the district.

Level of Cost/Efficiency
Based on cost and efficiency requirements for training and materials for all teachers that provide gifted education services, instructional strategies for high ability learners that focus on themes or problems are rated Medium.

Literature and Research-based References

Abstract [ERIC]: If education were to profit from existing information about the dynamic nature and structure of the brain, a variety of improvements could be made in schooling for the gifted, including elimination of its lockstep structure, multisensory processing of information, grouping by need, multidisciplinary and thematic instruction, and improved classroom environment.

Abstract [ERIC]: Review of problem-based learning (PBL) finds that innovation is comprised of four elements: an ill-structured problem, substantive content, student apprenticeship, and self-
directed learning. Research evidence suggests that PBL is better than traditional instruction on long-term information retention, conceptual understanding, and self-directed learning. Application of the method in classes for gifted students is addressed.


Abstract [ERIC]: How can high schools counteract deterrents to achievement that disadvantaged students face? "Project P-BLISS: Problem-Based Learning in the Social Sciences" presents "hidden" disadvantaged gifted students with a curriculum that first captures their interest and challenges them to realize their true potential.


Abstract [ERIC]: This study found that participants (n=78) in Science, Society and the Future, a problem-based course for gifted high school students, exhibited significant improvement in problem-solving schemes compared to a group of 42 gifted nonparticipants. The pattern of change was not consistent across problem-solving steps.


One hundred sixty seven high school students’ scores on multiple-choice standardized tests were compared after traditional and experimental instruction. In the experimental curriculum students used data and varying perspectives to resolve problems related to a variety of dilemmas such as the Salem witch trials, the use of the nuclear bomb on Hiroshima, and so on. Results indicated that students in problem-based learning classes did not sacrifice content acquisition in American Studies when compared to students learning in more traditional settings.


This paper explores the use of conceptual themes as a framework for interdisciplinary studies with gifted students. Describes sample themes and suggested student products, as well as guidelines for brainstorming, planning activities, facilitating production, and evaluating student products.


Abstract [ERIC]: A review of three curriculum and instructional models used with gifted students suggests that models of: content (emphasis on learning skills and concepts within a discipline); process-product (emphasis on investigatory skills to develop "products"); and epistemological (focus on understanding and appreciation of knowledge systems) should be considered together in a comprehensive program.

The William and Mary science units were tested for effectiveness. Pre-post measures suggested student gains in science process skills and higher level thinking in science.

Practice-based Resources and Materials

Center for Gifted Education. (1997-2005). William and Mary curriculum for high ability learners Science

*Dust Bowl*
*What a Find*
*Acid, Acid Everywhere*
*Electricity City*
*Hot Rods*
*No Quick Fix*


Abstract [ERIC]: This ERIC digest discusses strategies for recognizing and nurturing giftedness in young children in the regular classroom. It begins by describing giftedness and providing a list of characteristics common in gifted four-, five-, and six-year-olds. The use of portfolios for identifying giftedness is discussed, along with the benefits of consulting with parents. General principles of teaching young gifted children are then presented and include: (1) create a learning content areas, makes a wide range of materials available, provides activity centers for self-initiated projects, has flexible seating arrangements, offers active, lesson-related activity options for students who finish work early, and provides opportunities for creative movement, mime, dance, and singing; (2) allow for flexible grouping; (3) provide variety; (4) offer choices to allow children to chose group mates and topics and assist in designing projects and their formats; (5) create ground rules; (6) evaluate students individually; (7) compact the curriculum; and (8) incorporate creative thinking. Teachers are urged to use tests, class assignments, observations, informal interviews, consultations with parents, and portfolios for ongoing assessment on how children are performing.


Abstract [ERIC]: The 12 articles presented in this issue of a journal on giftedness in school-age children focus on interdisciplinary thematic instruction for gifted students. "Untangling the Web of Interdisciplinary Instruction" (Susan L. Beibelman and Sandy Hall-Chiles) explains the use of a curriculum webbing model to provide structure. "Interdisciplinary Thematic Curriculum" (Sandra Kaplan) notes the particular relevance of this approach to gifted learners. "A Partnership Venture: Introducing Theme-Based Instruction to Teachers and Parents" (Rena Bonne) briefly describes parent participation in New York City's Anderson Program. "Do Concepts Still Have a Place in Teaching Social Studies?" (Dorothy Connet) identifies major concepts and illustrates their use in curriculum development. "Differentiating Content for Secondary Gifted Learners" (James Curry) examines acceleration and enrichment and offers strategies for upgrading content complexity. "Themes in Science: A One-Year Program for Grade 3" (Jacqueline Barber) presents activities focusing on three specific processes and five themes. Two essays--on jumping the penmanship hurdle and writing parallel poetry, by Pat Lawrence and Carrie Millat respectively--
are presented next, followed by a section called "Let's Hear It from the Teachers" which contains brief reports by classroom teachers describing specific applications of thematic instruction with gifted students. The final article, "Thinking Blocks for Literature" (Stephen Marcus) offers a strategy for helping students structure their thinking about a work of literature.
Multidisciplinary Study

Description

Instruction that uses multiple or interdisciplinary study incorporates other instructional strategies, such as critical thinking, independent study, and the research process, to examine connections between disciplines. Interdisciplinary study is appropriate for gifted learners because it responds to the advanced learner readiness of gifted learners by encouraging critical reasoning and creating connections between disciplines and thus responding to gifted learners’ readiness for complexity and challenge. Structuring an interdisciplinary curriculum also requires gifted learners to learn at a greater depth and to incorporate multiple areas of knowledge and skill when demonstrating the connections between disciplines.

Suggestions for Staff Expertise and Training

General Education Teacher

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers implementing a curriculum for gifted learners that incorporates the study of multiple disciplines need to understand and work within the disciplines addressed. These teachers also need to be able to differentiate the curriculum for gifted learners through multiple instructional strategies (i.e., critical thinking, curriculum compacting, etc.). These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity within an interdisciplinary curriculum.

Gifted Intervention Specialist

Gifted Intervention Specialists should be able to train and support General Education teachers in their differentiation of curriculum for gifted learners through interdisciplinary study. Specialists also need training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners based on the program model used within the district.

Level of Cost/Efficiency

Based on cost and efficiency requirements for training and materials for all teachers that provide gifted education services, instructional strategies for high ability learners that focus on multidisciplinary study are rated Medium.

Literature and Research-based References


Abstract [ERIC]: Nineteen elementary grade teachers who worked with minority, rural, and disadvantaged gifted students participated in a workshop on interdisciplinary active learning. Pretest and posttest scores revealed increased levels of perceived knowledge, skills, and implementation. Mixed results were obtained from comparison with a control group.


This paper explores the use of conceptual themes as a framework for interdisciplinary studies with gifted students. Describes sample themes and suggested student products, as well as
guidelines for brainstorming, planning activities, facilitating production, and evaluating student products.

**Practice-based Resources and Materials**

Abstract [ERIC]: To increase students' problem-solving abilities, the New York State New Compact for Learning requires schools to do more interdisciplinary, community-based work. Fairport High School's venture exploring the European Union evolved from Connections, a school-within-a-school program serving highly able students. Cooperation among three departments and participant incentives helped ensure this distance education program's success.

Abstract [ERIC]: Describes a one-year course to develop students' research skills at the Arkansas School for Mathematics and Science. The course offers a combination of rigorous content (optics and optical instrumentation), interdisciplinary curriculum, and hands-on experiences in meaningful, nontraditional learning in real-life research settings.

Abstract [ERIC]: A Javits grant implemented statewide in Kentucky used innovative curriculum and team teaching to identify and serve middle school gifted students. Project components included interdisciplinary curriculum development, staff development, expanded provision of services, alternative methods for identifying middle school gifted students, and parent training.
**Curriculum Compacting**

**Description**

Curriculum compacting is a strategy rooted in pre-assessment of learner readiness and which allows students to move at an appropriate pace through the regular curriculum. The strategy of curriculum compacting incorporates three steps: 1) Define the goals and outcomes of a particular unit of instruction; 2) Assess and document which students have mastered a specific set of learning outcomes; 3) Provide instructional options for students during the segments of material already mastered during the implementation of the learning unit. The time students “buy back” should be used for strength areas or to extend their readiness, not for remediation of learning weaknesses (Adapted from Riley, 2005). Appropriate use of this time would incorporate advanced content (i.e., acceleration through aligned standards) or instructional strategies that require greater depth, challenge, creativity, and/or complexity within the knowledge or skill area addressed by the learning unit. For example, a study of poetry would require a student to select and study other poems with a similar theme, structure, or use of imagery and then use these poems to provide evidence for a critical analysis of multiple poets.

**Suggestions for Staff Expertise and Training**

**General Education Teacher**

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers implementing curriculum compacting for gifted learners need to understand the vertical alignment of the strands within the content area standards as well as recognize appropriate extension of these learning goals for gifted learners. These teachers need to be able to plan, assess, and differentiate the curriculum for gifted learners by providing multiple learning options. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity within a unit of study incorporating curriculum compacting.

**Gifted Intervention Specialist**

Gifted Intervention Specialists should be able to train and support General Education teachers in their differentiation of curriculum for gifted learners through curriculum compacting. Specialists also need training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners based on the program model used within the district.

**Level of Cost/Efficiency**

Based on cost and efficiency requirements for training and materials for all teachers that provide gifted education services, the use of instructional strategies for high ability learners that focus on curriculum compacting in all content areas is rated High.

**Literature and Research-based References**


Abstract [ERIC]: This study examined effects of three increasing levels of curriculum compacting on the instructional practices of 470 elementary school teachers with gifted students.
in regular classes. Teachers were able to eliminate between 24% and 70% of the curriculum across content areas for more capable students but required assistance in designing challenging replacement activities.


Abstract [ERIC]: A major problem facing schools is lack of curricular differentiation and academic challenge for the most academically able students. Also, contemporary textbooks have been "dumbed down." Curriculum compacting is a flexible, research-based technique enabling high-ability students to skip work they already know and substitute more challenging content. A recent study and program development advice are included.


Abstract [ERIC]: Three levels of staff development were provided to 300 elementary teachers to train them in curriculum compacting for high ability students. Teachers eliminated about half of the content for targeted students. Teachers receiving the most intensive training created higher quality compactor forms for students and used more replacement strategies and more diverse options for targeted students.


Findings from this national study suggest that when the curriculum is compacted and 40-50% of the curriculum is eliminated for gifted students, their standardized achievement test scores do not differ significantly from those students who did not receive the opportunity for compacting.


Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.


This article describes the replication of the Classroom Practices Survey Study. An overview of the rationale, procedures, results, and conclusions of the replication study are described. The results from this survey indicate that teachers with formal training in gifted education provide curriculum modifications for high ability/gifted students more frequently.

**Practice-based Resources and Materials**

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Abstract [ERIC]: A teacher describes implementation of curriculum compacting with a cluster of gifted children in her regular fourth grade classroom. Children who demonstrate that they have mastered a specific content area work together on independent work in that area and present reports to the class.

Abstract [ERIC]: This article explores four variables that can help gifted students learn: (1) time (including using acceleration, curriculum compacting, dual enrollment, multi-age classrooms, self-pacing, pre-assessments, and telescoping); (2) structure (including structuring content, the process, and the environment); (3) support (including using encouragement and feedback); and (4) complexity (including using curriculum differentiation).

Abstract [ERIC]: This account of teaching regular and gifted students is based on a university education professor's return to the classroom. Discussion covers: the value of teaching without textbooks, compacting the curriculum to allow students to pursue their talents, and combining affective and cognitive content within the curriculum to promote student growth.

Abstract [ERIC]: Optimum conditions for gifted students in regular classrooms are discussed, including the advantages of cluster grouping and curriculum compacting. The importance of providing positive teacher attitudes toward gifted students and promoting psychological safety for the student who is gifted are emphasized. Seven cognitive and affective classroom strategies are recommended.

This book provides strategies and forms as well as a rationale for teachers to compact the curriculum based on student pre-assessments. Once students demonstrate mastery of a given topic through pre-assessment options, students are provided contracts for independent study opportunities.

This chapter outlines the research evidence and “how-to” applications of the Schoolwide Enrichment Model, including how students may explore and research areas of interest after compacting out of content already known.

From the text: “This chapter describes the relationship between gifted and talented students and the principles of qualitative differentiation embedded in both enriched and accelerated strategies within regular classrooms. The strategies described use individualized assessment to identify strengths, interests, skills, and abilities so that responsive educational options can be flexibly delivered. The principles and practices of school wide strategies and those based in individual classrooms are shared. Finally, answers to some frequently asked questions regarding regular classroom practices are contemplated, and materials designed to support gifted and talented students and their teachers are recommended.” (p. 578)


Abstract [ERIC]: This brief paper summarizes guidelines for adapting instruction for advanced learners in inclusive, mixed-ability middle school classrooms. A rationale for differentiating instruction is followed by consideration of what differentiation is and is not. Characteristics of a differentiated class are enumerated, including: instruction is concept focused and principle driven, on-going assessment of student readiness and growth are built into the curriculum, and flexible grouping is consistently used. Suggested ways to differentiate instruction are grouped into interest-based adjustments, adjustments based on learning profile, and readiness-based adjustments. These last adjustments involve offering students a range of learning tasks developed along eight continua as follows: (1) concrete to abstract, (2) simple to complex, (3) basic to transformational, (4) fewer facets to multi-facets, (5) smaller leaps to greater leaps, (6) more structured to more open, (7) less independence to greater independence, and (8) slower to quicker. Suggested strategies for managing a differentiated classroom include: use of multiple texts and supplementary materials, interest centers, learning contracts, compacting, and group investigation. Teachers are urged to prepares students and parents for a differentiated classroom, attend to issues of classroom structure and management, and plan with team members and other colleagues interested in differentiation.


Abstract [ERIC]: Noting that teachers in mixed-ability classrooms face multiple challenges at every grade level, this book provides guidance for teachers who are interested in creating learning environments that address the diversity typical of mixed-ability classrooms. The principles and strategies included can help teachers address a variety of learning profiles, interests, and readiness levels. The goal of the book is to help teachers determine what differentiated instruction is, why it is appropriate for all learners, how to begin to plan for it, and how to become comfortable enough with student differences to make school comfortable for each learner. Numerous practical examples assist teachers to use instructional strategies such as curriculum compacting, entry points, graphic organizers, contracts, and portfolios. The chapters are: (1) "What Differentiated Instruction Is--And Isn't"; (2) "The Rationale for Differentiated Instruction in Mixed-Ability Classrooms"; (3) "The Role of the Teacher in a Differentiated Classroom"; (4) "The Learning Environment in a Differentiated Classroom"; (5) "A Look Inside
Some Differentiated Classrooms”; (6) "Strategies for Managing a Differentiated Classroom”; (7) "Preparing Students and Parents for a Differentiated Classroom”; (8) "The How To's of Planning Lessons Differentiated by Readiness”; (9) "The How To's of Planning Lessons Differentiated by Interest”; (10) "The How To's of Planning Lessons Differentiated by Learning Profile”; (11) "Differentiating Content”; (12) "Differentiating Process”; (13) "Differentiating Products”; and (14) "Grading in a Differentiated Classroom.” Appended is a table describing various instructional and management strategies and providing guidelines for their use. A list of resources for further reading completes the book.

Abstract [ERIC]: This article discusses methodologies for differentiating instruction for gifted students in regular social studies classes including curriculum compacting, conceptual thematic units, questioning strategies, interest development centers, independent study, and mentorship. Recommendations comply with performance expectations of the National Council for the Social Studies.

Abstract [ERIC]: To meet the needs of high achieving students within regular elementary classrooms, teachers can utilize such effective practices as curriculum compacting services, students' ownership of learning, reflective teaching practices, students' choices, challenging curricula, flexible teaching, teacher collaboration, and independent student projects.

Abstract [ERIC]: This brief information sheet presents two strategies to motivate gifted students and is based on the book, "Teaching Gifted Kids in the Regular Classroom", by Susan Winebrenner. The curriculum compacting strategy allows students to spend less time with the regular curriculum and more time with extension and enrichment activities. The contracts strategy involves written agreements between teachers and students that outline what students will learn, how they will learn it, in what period of time, and how they will be evaluated. Specific guidelines are offered for implementing both compacting and contracts for: first, pretestable subject areas where students move between an instructional group and extension activities; and, second, subject matter that is not pretestable because of subject unfamiliarity to students. Guidelines are also offered for evaluating alternative work accomplished in both types of subject area.

Abstract [ERIC]: The following strategies are presented for creating conditions in which gifted students consistently move forward academically: curriculum compacting and differentiating for gifted students in heterogeneous classes; pre-testing content; and allowing gifted students to be grouped together to work on alternative tasks during cooperative learning activities.

Abstract [ERIC]: Suggestions for teaching students who are both gifted and learning disabled stresses providing them with compacting and differentiation in the areas of their strengths and direct instruction of learning strategies in their areas of weakness. The article also warns that the child's giftedness may go unnoticed and unaccommodated in favor of attending to the child's learning deficits.
Methods to Stimulate High-level Thought: Critical Thinking, Divergent Thinking, Abstract Thinking, Logical Reasoning, & Problem Solving

Description
Multiple models and instructional strategies can be used to stimulate higher levels of thinking.

Critical thinking is often associated with the process of analyzing, evaluating, applying, and synthesizing information in order to make an informed decision, to inform an opinion, or to enhance communication.

Divergent thinking is the process of developing multiple solutions or answers to a problem or question.

Abstract thinking requires students to identify and work with concepts and ideas instead of concrete objects.

Logical reasoning requires students to present a point of view, support their perspective with reasons, clarify their reasons, and explore various counterarguments to their perspective. This approach is similar to the debate model.

Problem solving requires students to identify a problem and the relevant information presented in a particular situation. Students then work through a process to gather information about potential solutions and evaluating those solutions both in theory and then in practice with the chosen solution. Two examples of formal problem solving activities are Creative Problem Solving (CPS) and Future Problem Solving (FPS).

Suggestions for Staff Expertise and Training

General Education Teacher
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers implementing methods to improve higher level thinking for gifted learners need to be able to understand, apply, and teach the various methods. These teachers also need to be able to appropriately differentiate the curriculum for gifted learners using these methods. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity using these methods.

Gifted Intervention Specialist
Gifted Intervention Specialists should be able to train and support General Education teachers in their differentiation of curriculum for gifted learners through methods that stimulate higher level thinking. Specialists also need training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners based on the program model used within the district.

Level of Cost/Efficiency
Based on cost and efficiency requirements for training and materials, instructional strategies for high ability learners that focus on higher level reasoning, critical thinking, etc., are rated High.

Literature and Research-based References

Based on Bloom’s Taxonomy, the authors introduce creative production as the highest level of Bloom’s and provide a rationale and examples of questions and activities for teachers to scaffold learning processes to promote higher level tasks.


The authors explain five components of metacognition in gifted students: strategy use, strategy knowledge, acquisition procedures for monitoring strategy effectiveness and creating new strategies, an understanding of how strategies may be related, and a belief that strategies used are beneficial. Furthermore, they found that gifted students, when compared to nongifted students, use more strategies in flexible manners and are better able to transfer strategies learned to other situations.


Abstract [ERIC]: This review of the literature examines three aspects of creative thinking and production: (1) metacognitive processing; (2) the knowledge base; and (3) personality variables. It is concluded that all three are essential elements, they operate interactively, and the results of creative thinking and problem solving are best assessed through evaluation of the products.


Abstract [ERIC]: Research based effectiveness information is given for the following major instructional materials: Purdue Creative Thinking Program, Productive Thinking Program, Creative Problem Solving Program, Creative Studies Project, Imigi/Craft Series, Thinking Creatively, New Directions in Creativity, and the Peabody Language Development Kits.


Abstract [ERIC]: This study compared metacognitive performance of gifted, gifted learning-disabled, learning-disabled, and average males in grades 5 and 6 and grades 11 and 12. For metacognitive knowledge, skill on think-aloud error detection reading, and comprehension, the performance of gifted learning-disabled students resembled that of gifted students more than that of learning-disabled students.


Abstract [ERIC]: Comparison of 107 kindergarten children who either were or were not in a gifted program and received or did not receive special training in synectics (a strategy to facilitate creative thinking) found significant improvement in creativity scores for experimental but not control groups but not more for gifted than for nongifted children.

Abstract [ERIC]: Gifted students (N=148) in grades four to seven, classified by teachers according to achievement level (below expectations, at expectation level, above expectations), were administered the "Your Style of Learning and Thinking" and "Readiness for Self Directed Learning" self-report questionnaires, with resulting significant main effects for achievement.


This book outlines core skills of effective thinking and metacognition so one may analyze his/her own though processes and understand how people think, including the types of thinking and levels of thinking that take place in a given situation. These skills can easily be applied to the classroom and instruction as educators may apply these skills to analyze student responses and questions and ask more difficult questions in the classroom as well.


Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.


To truly understand gifted performance, it is necessary to merge research on giftedness with current thinking in cognitive development and intelligence. This article presents traditional research on gifted children's cognitive development then considers how the application of newer models and theories from the field of cognitive development can be combined with research on giftedness to change the way people think about gifted performance. First four factors that have often been associated with giftedness are discussed from the perspectives of cognitive developmental psychology and gifted education. Next, emphasis is placed on investigating the strategic development of gifted children. Specifically, R. S. Siegler's (*Emerging Minds: The Process of Change in Children's Thinking*, Oxford University Press, New York, 1996) model of strategy development is addressed in terms of what it may contribute to understanding gifted cognition. Finally, future lines of research using models from cognitive development and complex systems models of development are recommended.


Sternberg’s Triarchic Model involves three components: analytical thinking, practical thinking, and creative thinking. Using an identification tool, the Sternberg Triarchic Abilities Test, with
instructional processes in elementary and middle school suggest that student achievement gains are slightly higher when using the Triarchic Model than with other critical thinking approaches.


Abstract [ERIC]: The paper examines the nature of creativity and educational changes which have placed greater emphasis on creative problem solving and creative expression. Specific focus is on: (1) production of curriculum and instructional programs to facilitate creative thinking, and (2) development of procedures for measuring creative thinking abilities.


Abstract [ERIC]: The author briefly examines theories of creativity, describes problems in its identification, and cites implications for gifted education of creativity training research done over the last 20 years.


Based on focus groups, interviews, documents, and classroom observations of schools implementing the William and Mary language arts and science curricula it was found that students, teachers, parents, and administrators observed increased student engagement in class, enhanced reasoning skills, and the improvement of habits of mind – including metacognition

**Practice-based Resources and Materials**

Center for Gifted Education. (1997-2005). William and Mary curriculum for high ability learners

**Language Arts**

*Beyond Words*

*Journeys and Destinations*

*Literary Reflections*

*Patterns of Change*

*Autobiographies*

*Persuasion*

*The 1940s: A Decade of Change*

*Utopia*

*Threads of Change in 19th Century American Literature*


This online manual provides an overview of the Osborne-Parnes Creative Problem Solving (CPS) process. This resource navigates users through the CPS process and provides templates and forms to assist the process.


DeBono's Thinking Hats require students to examine situations creatively through different "hats" they wear to think about an issue. Each color hat represents a different way of thinking.
Students wear the hats at the same time to promote "parallel thinking" versus argument. The hats are as follows: White Hat - Facts and Information; Red Hat – Feelings and Intuition; Yellow Hat – Benefits and Feasibility; Black Hat -- Caution, Difficulties, and Assessment; Green Hat – Alternatives and Creative Ideas; Blue Hat – Managing the Thinking Process. Major companies also incorporate the use of hats to reason through issues during meetings.

Destination Imagination, http://www.destinationimagination.org/

This resource uses the Creative Problem Solving (CPS) process to help students improve their critical and creative thinking. Teaching notes and illustrated worksheets take teacher and students through the steps of the problem solving process.

This resource provides guidance on the Creative Problem Solving (CPS) process through step-by-step activities.

This resource provides an overview of the Creative Problem Solving (CPS) process and guides students through the steps of the problem solving process.

Abstract [ERIC]: Stresses that critical thinking is more than a set of skills; it also involves intellectual traits that should be cultivated. These traits include intellectual humility, courage, empathy, integrity, and perseverance; faith in reason; and fair-mindedness. Self-questioning is an important means of developing these traits.

This booklet provides open-ended question stems based on logic across disciplines. Rubrics to analyze thinking are also provided based on the scaffolding of reasoning through events or situations by determining the central purpose or question at issues, gathering information or data, examining inferences and interpretations based on data, understanding assumptions of others and self, and recognizing other points of view and the implications and consequences of actions.

This booklet provides examples of ways teachers can ask analytic and evaluative type questions across academic disciplines and teach children how to question for self-knowledge and self development. Models for Socratic questioning are included.

Beach, CA: The Foundation for Critical Thinking. This booklet explains how the human mind works and how thinking happens. Questions surrounding clarity, depth, breadth, accuracy, points of view, perceptions, and implications are emphasized.


Firestien, R. L., & Treffinger, D. J. (1989). Update: Guidelines for effective facilitation of creative problem solving. Part Three. Gifted Child Today, 12(6), 40-44. Abstract [ERIC]: This article, third in a series, discusses the last three phases of the creative problem solving process: idea-finding, solution-finding, and acceptance-finding. These phases focus on brainstorming to generate possibilities and alternatives to the problem, evaluating each idea's strengths and limitations, prioritizing the solutions, and developing an accepted plan of action.


Myers, R. E., & Torrance, E. P. (2003). What next? Futuristic scenarios for creative problem solving. Waco, TX: Prufrock Press. Abstract [ERIC]: This book contains 52 units designed to assist teachers in helping their students improve their creative writing and communication skills, improve their skills in creative problem solving, and enlarge, enrich, and make more accurate their images of the future. Each unit begins with an overview of the activity, an explanation of the creative thinking skill to be developed, and suggestions for preparing for the unit, presenting the unit, and for the writing assignment.
The introduction is following by a student activity. Some of the activities presented include: writing an advertisement for a new product; exploring how unfortunate happenings could be a blessing in disguise; writing a fortune; writing an editorial on an endangered species; describing future wars; describing a lunar extravaganza; writing a poem; describing an invention; inventing futuristic acronyms; developing rhymed verse; making predictions about handling guilt in the future; writing futuristic news articles; writing limericks; writing a dramatic skit; naming unborn offspring; using alliteration; and writing short stories. Three or four levels of involvement are provided in each activity or unit to motivate students to do a variety of creative writing.


Abstract [ERIC]: This study evaluated the effectiveness of Camp Invention, a hands-on creativity and science day camp run in partnership with about 400 schools nationwide. A survey of 17,526 campers, parents, and staff supported the positive impact of Camp Invention for both boys and girls, in urban and suburban settings, and on attitudes towards creativity, active learning, and exploration.


Talents Unlimited consists of four major components to help students advance including specific skill or talent abilities that incorporate productive thinking, communication, forecasting, decision-making and planning; model instructional strategies; inservice training for teachers; and an evaluation system for assessing students’ thinking skills. Evidence suggests that the program enhances students’ creative and critical thinking and standardized test scores.


Abstract [ERIC]: This article explores the conditions necessary to facilitate the growth of creativity. These conditions include cultivation of such personality traits as independence, self-confidence, initiative, flexibility, courage to express divergent ideas, and persistence; encouragement of reception to new ideas; and use of classroom exercises to produce new idea combinations such as brainstorming, synectics, and attribute listing.


Abstract [ERIC]: The article describes the theory of synectics, an idea producing process, and shows how upper elementary gifted students can be taught to use synectics in more effective problem solving. Steps in the synectics process are reviewed.

Abstract [ERIC]: Efforts toward excellence and effectiveness in school programs should be viewed as a powerful opportunity for gifted education. Gifted educators should work toward expanding receptiveness to lessons learned from organizational research on innovation and change, effectiveness, and improvement, and educators should recognize that gifted education can make important contributions to these efforts.


Abstract [ERIC]: This article reviews five frequently cited attributes of effective schools, presents steps in creating significant schools, considers the importance and role of talent development, and describes relevant applications of the Creative Problem Solving framework to synthesize school improvement and talent development efforts.


Abstract [ERIC]: The emerging approach to talent development differs from traditional gifted education in several ways. Instead of stressing acceleration or enrichment, the Levels of Service model blends many services and activities with other school activities to respond to students' individual talents, strengths, and sustained interests. Teachers do not compete with other school programs. Students are identified without being categorized.
Oral, Written, & Artistic Expression

Description

Instructional strategies that provide gifted learners with multiple options for expression encourage these students to explore their abilities and strengths through various products and domains often not included in a regular academic curriculum. These forms of expression also allow gifted learners social and emotional needs to be addressed within the standard academic program. These methods can be used in conjunction with the regular academic program or as a means to enhance and develop understanding or skills within a particular area (i.e., the arts, creative dramatics, creative writing, etc.).

Oral expression includes prepared and spontaneous oral presentations, presentations of creative works such as poetry and narratives, storytelling, participation in drama activities, and debate or reasoning activities.

Written expression includes in major strands of writing: persuasive, narrative, expository, descriptive, and creative works such as poetry and original forms.

Artistic expression includes the creative and performing arts, such as visual representation and creation, musical creation and performance, and dramatic movement or dancing.

Suggestions for Staff Expertise and Training

General Education Teacher

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers implementing oral, written, and artistic expression for gifted learners need to be able to understand, apply, and teach the various methods within the academic curriculum. These teachers also need to be able to appropriately differentiate the curriculum for gifted learners using these methods. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity using oral, written, and artistic expression.

Gifted Intervention Specialist

Gifted Intervention Specialists should be able to train and support General Education teachers in their differentiation of curriculum for gifted learners through methods that encourage oral, written, and artistic expression. Specialists also need training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners based on the program model used within the district.

Arts Specialist

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. Arts Specialists need to be able to understand and support the use of artistic expression to differentiate curriculum and instruction for gifted learners within the arts course areas or within the academic classroom. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace within the classroom setting and at appropriate levels of breadth, depth, and complexity. Arts Specialists need to be able to create and adapt curriculum for artistically talented students which includes activities for artistic creation and expression. These specialists also need to be able to
work collaboratively with General Education teachers and Gifted Intervention specialists to create and adapt curriculum for gifted learners.

**Level of Cost/Efficiency**
Based on cost and efficiency requirements for training and materials, instructional strategies for high ability learners that focus on oral, written, and artistic expression are rated Medium.

**Literature and Research-based References**


Abstract [ERIC]: Project ARTS was designed to identify high-ability, artistically talented third graders from four different ethnic backgrounds in seven rural schools and to implement differentiated arts programs for them. Locally designed measures, developed by teachers and community members, were found to be appropriate by educators if several different measures were used.


Abstract [ERIC]: This case study describes the effects of an art program in raising the self-esteem of an artistically talented fifth-grade girl who remained in the regular classroom while her academically gifted classmates left for gifted programs. Each assignment in the art program, and her response to the activity, are described.


Abstract [ERIC]: Students' preferences for creating potential products were explored through use of "My Way ... An Expression Style Inventory". Analysis of data from 3,532 students allowed examination of content and construct validity for the instrument. The article suggests practical applications for the inventory in talent-development programs such as those based on the Schoolwide Enrichment Model.


Abstract [ERIC]: Assigned drawings of 217 children (ages 4, 6, 8, and 10) were evaluated for both developmental and ability-related differences. Age-related trends were found in the ability to render perspective with talented children making flexible and elaborate use of perspectival abilities. Artistic abilities other than perspective appeared to be less influenced by development.

**Practice-based Resources and Materials**

Abstract [ERIC]: This article discusses how the exploration of opera with high-ability students can contribute to positive social and emotional development, particularly the development of humane intelligence, by stimulating ethical and moral awareness, making connections with age-old truths of humanity, and providing a powerful genre for self-expression. Teaching strategies are provided.


Abstract [ERIC]: The Growing Giftedness Model for teaching gifted students is presented, which includes the following features: identification that relies entirely on scores and on demonstrated performance; cluster grouping during elementary school and classes dominated by gifted students at the secondary level; acceleration and enrichment; creative expression opportunities; service learning; and counseling.


Abstract [ERIC]: Discusses how gifted students can experience the musical and pictorial magic of language through storytelling. Techniques and activities to be used in the general classroom or gifted pull-out programs are presented for sharing personal expression, the joy of language, and new styles of thought and expression.


Abstract [ERIC]: This essay uses poetry and diary entries of highly gifted young people to portray the process of individual identity development. Among topics discussed are theories of identity development, adolescence, awareness of difference by intellectually gifted children, development of a protective mask to hide a love of learning, moral development, and identity diffusion in adulthood.


Abstract [ERIC]: Journal writing is recommended to help gifted students understand themselves and be understood by others. Three techniques are described: journal jumpers, which are ideas useful in promoting self-disclosure and self-analysis in journal writing; film reaction writing; and analysis of emotional growth found in the journals of other writers.


Abstract [ERIC]: A Saturday arts program was developed to serve secondary-level gifted/talented students in Richland School District Two, South Carolina. The curriculum includes aesthetic valuing, aesthetic perception, cultural heritage, and creative expression. Students learn to create better art, develop creative thinking skills, and become aware of art career options.

Abstract [ERIC]: The study of creative movement, dramatic expression, and kinesthetic awareness can develop students' skills not only in movement but also in communication and leadership. Suggested kinesthetic activities follow the four phases of: physical movement, examining student responses, stimulating the imagination, and analyzing and sharing the experience.


Abstract [ERIC]: This book is intended as a guide for parents, teachers, and others interested in developing creative art talent in young people. The book is based on the following assumptions: (1) being able to recognize and knowing how to identify creative individuals with special talent in art, guidance can be given to maximize the achievement of their potential; (2) understanding creative imagination as process and skill will provide tools to talented individuals for their development in art; (3) mental images constitute the earliest information source prior to their symbolization in one language form or another; (4) visual art has its own language, derived first from mental imagery, and the artist learns and uses the language of art in productive expression; (5) individuals can be taught to use creative imagination to process all kinds of information and its art language-imagery correlates to produce original works; and (6) feedback in terms of appraisal of student art is essential to foster and guide developing talent. Chapters in the book are: (1) "The Creatively Gifted"; (2) "Measuring Creative Process"; (3) "Discovering Creative and Talented Individuals"; (4) "Art and Creative Imagination"; (5) "Related Dimensions of Creative Imagination"; (6) "Imagery as Language of Discovery"; (7) "Art Composition as Design"; (8) "Creative Thinking and Problem Solving Applied to Art"; (9) "Art Processed by Other Creative Imagination Techniques"; (10) "Instructional Application in Art"; (11) "Producing Art Using Creative Imagination"; (12) "Analogy-Metaphor Making Art"; (13) "The Magic of Color"; and (14) "Evaluating Student Artwork."


Abstract [ERIC]: This digest discusses how educators can integrate arts into gifted education and provides examples of activities that integrate the arts with language arts, social studies, and mathematic and science curricula. Examples include: (1) let students draw, sketch, or paint when reading a story; (2) stimulate analytical thinking and imaginative interpretation by working with the children to create a chamber theater piece out of a short story; (3) stimulate novel ideas for stories by providing visual catalysts for students to imagine what happened before and after the scenes depicted; (4) have students select a piece of music and assess how music could be a conversation; (5) have students express a famous character through visual art, mime or dramatics; (6) have students act as reporters who travel back in time to cover important events in an artistic movement; (7) have students compare the art of 19th century western artists versus that of African populations; (8) have students explore a scientific subject such as light by placing paintings together and discussing how the artists represent light; and (9) have students write down assumptions artists are making about the nature of matter using visual art, modern dance performance, and other sources.

Abstract [ERIC]: This digest describes academic creativity and offers suggestions for its development in gifted students. Creative learning and learning by authority are contrasted and examples of each are given. The naturally creative behavior of young children is noted. Among suggestions offered to teachers are: respect the unusual questions of children; show children that their ideas have value by listening and considering them; and provide chances for children to learn and discover without threats of immediate evaluation. Among suggestions offered to parents are: provide opportunities for creative expression, problem solving, and constructive response to change and stress; find creative ways to resolve conflicts between family members; and ensure that every family member receives individual attention and respect. Noted are ways adults can kill creativity in children, by insisting that children do things the "right way"; making comparisons with other children; and discouraging children's curiosity. Includes 14 references or other resources.
Independent Study and Research Methods

Description

An educational activity involving advanced or in-depth work by an individual pupil under the direction of a certificated member of the school staff in accordance with board policy. (p. 11)

Suggestions for Staff Expertise and Training

General Education Teacher

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers implementing independent study and research methods for gifted learners need to be able to understand and model independent research strategies as they support gifted learners. These teachers also need to be able to appropriately differentiate the curriculum for gifted learners using independent study and research methods. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity using independent study and research.

Gifted Intervention Specialist

Gifted Intervention Specialists should be able to train and support General Education teachers in their differentiation of curriculum for gifted learners through independent study and research methods. Specialists also need training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners based on the program model used within the district.

Level of Cost/Efficiency

Based on cost and efficiency requirements for training and materials, instructional strategies for high ability learners that focus on independent study and research methods are rated Low.

Literature and Research-based References


Gagne’s Differentiated Model of Giftedness and Talent illustrates the impact of environmental catalysts such as family, community, life events, and interests as well as natural catalysts such as student precocity and intelligence that impact life achievement, suggesting importance on providing community and family resources in a talent domain for precocious students.


Students who participated in interest and research-based activities based on Renzulli’s Schoolwide Enrichment Model in fourth through sixth grade were interviewed their senior year of college. Findings suggest that interest and research based activities positively impact post-second plans and future desires for creativity.

Abstract [ERIC]: This study examined the impediments a new private secular school with students working at above grade level encountered in its implementation of a project-based curriculum within the context of constructivist theory. Examined were the intended or formal curriculum, its implementation, and effects on the implementation. Data were gathered by observing classrooms, attending board and curriculum committee meetings, and interviewing students, teachers, and parents. The curriculum of the school promised learning that was real, contextual, and engaging. One impediment to forming the curriculum was differing perceptions between parents and board members about its form. Parents also showed concern over differentiation in instruction and wanted their children to receive challenging work. Also, parents who wanted specific subjects emphasized were not realizing the intended goals of integrated learning activities. Systems of structure were imposed on the curriculum, including structure in the physical environment, scheduling of content, time use, and teacher responsibilities. With an open curriculum, the teachers had a greater influence on structure than when it is set by outside goals or standards. The largest discrepancy between intended and implemented curriculum was the dichotomy between project-based, integrated curriculum and academic or subject-based curriculum. An appendix of research records is included.


Abstract [ERIC]: Explored the meaning of curricular differentiation for 11 gifted elementary school students by examining responses to open-ended activities. Participants' responses differed from typical students. Differentiation occurred by participants responding in more depth, with higher level skills, and in ways that were guided by their learning styles.


Based on student and parent questionnaires and school data, the Purdue Three-Stage Model of enrichment was examined. Students preferred to work on personally-generated studies based on their areas of interest instead of teacher assigned ones.

Moore, B. (2005). Developing research skills in gifted students. In F. A. Karnes & S. M. Bean (Eds.), Methods and materials for teaching the gifted (2nd). Waco, TX: Prufrock Press. This chapter outlines how educators can design opportunities for students to develop research skills using a given template that incorporates the steps of the research model.


This manual describes the six interest assessment tools that comprise the Interest-A-Lyzer "Family of Instruments." Dr. Renzulli discusses the importance of assessing student interests and provides suggestions for administering and interpreting these instruments in the school setting. Sample pages from each interest assessment tool are included in the appendix.

This chapter outlines the research evidence and “how-to” applications of the Schoolwide Enrichment Model, including how students may explore and research areas of interest after compacting out of content already known.


Abstract [ERIC]: Summarizes current research on ability grouping of academically gifted students. Findings show that advanced students benefit more academically than low-ability students from homogeneous grouping; homogeneous groups are more academically and socially beneficial for all abilities than heterogeneous grouping; continuous progress makes an academic difference when combined with other instructional approaches; and small-group learning is academically more beneficial than whole-group learning.


This chapter outlines an analysis study of curriculum model comparisons including the Integrated Curriculum Model, the Schoolwide Enrichment Model, Schlichter Model for Talents Unlimited, Sternberg’s Triarchic Model, Gardner’s Multiple Intelligence Model, Betts’ Autonomous Learner Model, The Kaplan Grid, the Purdue Three-Stage Enrichment Model, and others. Comparisons regarding the research base, curriculum, teacher training, ease of implementation, and student effectiveness data are listed.

**Practice-based Resources and Materials**


The Autonomous Learner Model suggests that as gifted student needs are met they will become autonomous learners. The model is divided into five dimensions: orientation, individual development, enrichment activities, seminars, and in-depth study. Suggestions for scope and sequence development and independent study programs are emphasized.

Center for Gifted Education (2000). *Center for Gifted Education research model*. Williamsburg, VA: College of William and Mary, Author.

This research model is based on Paul’s Reasoning Model and provides step-by-step questions to assist students with conducting real-world research through question posing, data collection, interpretation, product creation and determination of implications and consequences based on the data.


The Independent Study Program provides resource cards that guide students through the eight steps of independent study: selecting a topic, organizing a topic, asking questions, using a study method, collecting information, developing a product, presenting information, and evaluating the study. Instructions for teacher use and tips for classroom management are included.
Parker, J. P., & Begnaud, L.G. (2003). *Developing creative leadership. Gifted treasury series.* Teacher Ideas Press. Part of the Gifted Treasury Series, *Developing Creative Leadership* provides an overview of leadership in the crucial grades of 6-12. Drawing upon theories based on cognitive and affective leadership, and the role of leadership in gifted education, leadership is discussed as it pertains to research projects, problem solving, interpersonal communication, and decision-making. Strategies are provided for curriculum planning in the first half of the book in preparation for the second half, which presents practical units for developing leadership. Suggestions are made for developing programs around the Leadership Training Model (LTM), a comprehensive model on which gifted programs can be based.

Winebrenner, S. (2003a). *Teaching gifted kids in the regular classroom (2nd ed.)*. Minneapolis, MN: Free Spirit. This teacher-friendly book provides forms, templates, and examples of ways teachers can pre-assess student learning and provide alternate activities based on student interest. Five-most difficult first strategies as well as curriculum compacting approaches are emphasized along with student contracts and menus.
In-depth Topical Study through Open-ended Tasks

Description
Open-ended tasks or activities refer to activities with multiple responses or products as well as multiple process to complete these products (Hertzog, 1998). Therefore, open-ended tasks often have a purpose or goal but leave the “how” of the activity to the student and/or teacher to plan. Open-ended tasks that allow for in-depth study of a topic encourage gifted learners to use and develop multiple strategies to learn about an assigned topic or a topic of interest to the student. This type of activity responds to the advanced readiness of gifted learners. Choice of tasks may be assigned to the learner or include specific tasks designated by the teacher. The emphasis in open-ended tasks is on the multiple responses or solutions that may result from this instructional strategy.

Suggestions for Staff Expertise and Training

General Education Teacher
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers implementing in-depth study of a topic through open-ended tasks for gifted learners need to be comfortable with allowing the learner to navigate the process and present and support their product, solution, etc. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity using open-ended tasks. These strategies may include formal research or investigation processes (i.e., research process, independent study) or informal heuristics developed by students to meet the needs of the activity. These teachers also need to be able to identify and support the ways in which open-ended activities differentiate for the advanced cognitive needs of gifted learners.

Gifted Intervention Specialist
Gifted Intervention Specialists should be able to train and support General Education teachers in their differentiation of curriculum for gifted learners through in-depth study of a topic through open-ended tasks. Specialists also need training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners based on the program model used within the district.

Level of Cost/Efficiency
Based on cost and efficiency requirements for training and materials, instructional strategies for high ability learners that focus on in-depth study of a topic through open-ended tasks are rated Low.

Literature and Research-based References

Abstract [ERIC]: This study examined the impediments a new private secular school with students working at above grade level encountered in it implementation of a project-based curriculum within the context of constructivist theory. Examined were the intended or formal curriculum, its implementation, and effects on the implementation. Data were gathered by
observing classrooms, attending board and curriculum committee meetings, and interviewing students, teachers, and parents. The curriculum of the school promised learning that was real, contextual, and engaging. One impediment to forming the curriculum was differing perceptions between parents and board members about its form. Parents also showed concern over differentiation in instruction and wanted their children to receive challenging work. Also, parents who wanted specific subjects emphasized were not realizing the intended goals of integrated learning activities. Systems of structure were imposed on the curriculum, including structure in the physical environment, scheduling of content, time use, and teacher responsibilities. With an open curriculum, the teachers had a greater influence on structure than when it is set by outside goals or standards. The largest discrepancy between intended and implemented curriculum was the dichotomy between project-based, integrated curriculum and academic or subject-based curriculum. An appendix of research records is included.


Abstract [ERIC]: Explored the meaning of curricular differentiation for 11 gifted elementary school students by examining responses to open-ended activities. Participants' responses differed from typical students. Differentiation occurred by participants responding in more depth, with higher level skills, and in ways that were guided by their learning styles.

**Practice-based Resources and Materials**


The Autonomous Learner Model suggests that as gifted student needs are met they will become autonomous learners. The model is divided into five dimensions: orientation, individual development, enrichment activities, seminars, and in-depth study. Suggestions for scope and sequence development and independent study programs are emphasized.


This article describes how teachers can modify lessons that meet the varied learner needs based on interest, readiness, and/or learning profiles of students. Considerations and accommodations should be made for all ability levels as well as individual learning interest and styles.


This teacher-friendly book provides forms, templates, and examples of ways teachers can pre-assess student learning and provide alternate activities based on student interest. Five-most difficult first strategies as well as curriculum compacting approaches are emphasized along with student contracts and menus.
Description

This instructional model relies on a variety of instructional strategies such as logical reasoning and independent study. The emphasis in this model is primarily on the outcome of the study. This type of activity responds to the advanced readiness of gifted learners by incorporating complexity and abstract, higher-level thinking processes. Therefore, products need to be assessed on the portrayal of these higher-level processes as well as the extent to which depth of content knowledge is demonstrated.

Suggestions for Staff Expertise and Training

General Education Teacher

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers implementing this instructional model need to be comfortable with assessing multiple types of products for content knowledge and application of higher-level thinking skills. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to explore and apply higher-level thinking skills at appropriate levels of breadth, depth, and complexity. These teachers also need to be able to work with gifted learners in a situation where they serve as a guide or facilitator of the student’s learning experience.

Gifted Intervention Specialist

Gifted Intervention Specialists should be able to train and support General Education teachers in their differentiation of curriculum for gifted learners through in-depth study of a topic through products that reflect higher level thinking skills. Specialists also need training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners based on the program model used within the district.

Level of Cost/Efficiency

Based on cost and efficiency requirements for training and materials, instructional strategies for high ability learners that focus on in-depth study of a topic through products that reflect complex abstract, and/or higher level thinking skills are rated Low.

Literature and Research-based References


Abstract [ERIC]: A case study investigated the research processes and authentic learning experiences of 10 junior high students as they completed independent research projects. Students experienced the most difficulty in exploring and forming a focus. Only three students demonstrated all of the characteristics of authentic learning in their final products.


The authors explain five components of metacognition in gifted students: strategy use, strategy knowledge, acquisition procedures for monitoring strategy effectiveness and creating new
strategies, an understanding of how strategies may be related, and a belief that strategies used are beneficial. Furthermore, they found that gifted students, when compared to nongifted students, use more strategies in flexible manners and are better able to transfer strategies learned to other situations.

Abstract [ERIC]: This study compared metacognitive performance of gifted, gifted learning-disabled, learning-disabled, and average males in grades 5 and 6 and grades 11 and 12. For metacognitive knowledge, skill on think-aloud error detection reading, and comprehension, the performance of gifted learning-disabled students resembled that of gifted students more than that of learning-disabled students.

**Practice-Based Resources**

Abstract [ERIC]: A teacher describes implementation of curriculum compacting with a cluster of gifted children in her regular fourth grade classroom. Children who demonstrate that they have mastered a specific content area work together on independent work in that area and present reports to the class.

The Autonomous Learner Model suggests that as gifted student needs are met they will become autonomous learners. The model is divided into five dimensions: orientation, individual development, enrichment activities, seminars, and in-depth study. Suggestions for scope and sequence development and independent study programs are emphasized.

Center for Gifted Education (2000). *Center for Gifted Education research model*.  
Williamsburg, VA: College of William and Mary, Author.  
This research model is based on Paul’s Reasoning Model and provides step-by-step questions to assist students with conducting real-world research through question posing, data collection, interpretation, product creation and determination of implications and consequences based on the data.

Abstract [ERIC]: This article discusses methodologies for differentiating instruction for gifted students in regular social studies classes including curriculum compacting, conceptual thematic units, questioning strategies, interest development centers, independent study, and mentorship. Recommendations comply with performance expectations of the National Council for the Social Studies.
Other: Diagnostic-prescriptive Curriculum and Instruction

Description
Diagnostic-prescriptive curriculum and instruction is a strategy rooted in pre-assessment of learner readiness, thereby allowing students to move at an appropriate pace through the regular curriculum. While similar to curriculum compacting, this instructional model focuses on skills and concepts within a particular domain of inquiry (i.e., mathematics, science, etc.). This approach works best with curriculum that is organized sequentially within a discipline, allowing students to accelerate through the strands of the discipline with continuous progress.

Suggestions for Staff Expertise and Training

General Education Teacher
All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers implementing this instructional model need to be comfortable with designing and utilizing assessments to target areas of strength and reducing the amount of time spent on mastery of concepts and skills within a discipline. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity. These teachers also need to be able to work with gifted learners in a more individualized instructional setting.

Gifted Intervention Specialist
Gifted Intervention Specialists should be able to train and support General Education teachers in their differentiation of curriculum for gifted learners through diagnostic-prescriptive curriculum and instruction within the core content areas. Specialists also need training in collaborating with classroom teachers to provide ongoing appropriate services for gifted learners based on the program model used within the district.

Level of Cost/Efficiency
Based on cost and efficiency requirements for training and materials, the use of diagnostic-prescriptive curriculum and instruction strategies for high ability learners is rated Low.

Literature and Research-based References

Ablard, K. E., Mills, C. J., & Duvall, R. (1994). Acceleration of CTY math and science students (Tech. Rep. No. 10). Baltimore, MD: Johns Hopkins University, Center for Talented Youth. Varied types of acceleration including individually paced Pre-calculus and Fast-Paced Science courses from the Center for Talented Youth, using diagnostic-prescriptive approaches were examined and student perceptions discussed. Students felt that acceleration was overall positive but felt isolated from their peers and uncomfortable being in classes with older students. However, students felt that the opportunity to be challenged outweighed the social negatives.

characteristics of gifted students and, second, to accommodate individual differences. Use of the technique and checklist are illustrated by a case study.

Abstract [ERIC]: Principles of providing appropriate instruction for precocious youth include diagnostic/prescriptive assessment of students' current levels of achievement and readiness for new material; arrangement of instructional conditions so students are working with appropriate curriculum and materials; and provision of classroom learning experiences at the appropriate level, pace, and depth.

This longitudinal study outlines a diagnostic-prescriptive talent development acceleration program in mathematics through Johns Hopkins University. Positive effects using this approach have been documented.

Abstract [ERIC]: Suggestions are made for a new paradigm for identifying talent potential in underserved populations. Suggestions focus on dynamic assessment of gifted behaviors within students' own sociocultural contexts, more varied and more authentic assessment, and integrating identification processes with learning opportunities. (Author/PB)

Findings from this national study suggest that when the curriculum is compacted and 40-50% of the curriculum is eliminated for gifted students, their standardized achievement test scores do not differ significantly from those students who did not receive the opportunity for compacting.

Social-emotional concerns, early college entrance, diagnostic-prescriptive approaches, grade skipping, and early school entrance as well as other accelerative options are discussed in this book, noting the research effects and findings for each.

Five cohorts who participated in the Johns Hopkins University Study of Mathematically Precocious Youth were surveyed at age 19, some at age 23, and some at age 33. Students who choose to accelerate in high school do not suffer academically but gain speed in their educational preparation and enjoy greater success in college.
Practice-based Resources and Materials


Abstract [ERIC]: This article describes the implementation in Brooklyn, New York, of the Diagnostic Testing and Prescriptive Instruction mathematics instruction model, which establishes the level of knowledge of each student and then offers instruction at the student's pace. Implementation involves teacher training, student selection, curriculum development, and program evaluation.


This article describes ways teachers can accelerate the curriculum in their classrooms by pre-assessing students and modifying their instruction, allowing them the either move through the curriculum at a faster pace or to provide in-depth learning experiences with more depth.


Abstract [ERIC]: This article describes an authentic assessment approach used in English/language arts and mathematics with gifted students in Texas elementary and secondary schools, which focused on developing instructional experiences that challenge gifted students and documenting student progress over time. The use of portfolios was valuable for both instructional and assessment purposes. Staff development was emphasized.


Abstract [ERIC]: The article describes application to mathematically gifted elementary age students of the diagnostic/prescriptive model developed by the Study of Mathematically Precocious Youth. A five-step procedure of beyond-level standardized testing is followed by mentored instruction based on analysis of testing errors. (DB)


This book provides strategies and forms as well as a rationale for teachers to compact the curriculum based on student pre-assessments. Once students demonstrate mastery of a given topic through pre-assessment options, students are provided contracts for independent study opportunities.


The author suggests ideas for how to match instructional approaches to readiness, interests, and talents of students and discusses learning centers, hands-on activities, contracts, investigative projects, and more. An appendix lists strategies, including pre-testing and compacting the curriculum, independent projects, interest centers, and tiered assignments.
This teacher-friendly book outlines the rationale for acceleration, the research base on the effects of acceleration, and the types of acceleration. Usable forms and examples of ways teachers can collapse the curriculum, use diagnostic-prescriptive teaching, and effectively document and proactively plan for gifted children’s growth and acceleration in school are also included.

This teacher-friendly book provides forms, templates, and examples of ways teachers can pre-assess student learning and provide alternate activities based on student interest. Five-most difficult first strategies as well as curriculum compacting approaches are emphasized along with student contracts and menus.
Other: Problem-based Learning

Description

Problem-based learning is an instructional model that uses an ill-structured problem similar to real-world problems. Ill-structured problems contain more information than is needed to understand and solve the problem, change as more information is added to the situation, can be examined through multiple perspectives, and do not have a single right answer (Gallagher, Stepien, & Rosenthal, 1992).

Problem-based learning incorporates other instructional strategies and requires the acquisition of content knowledge and skills to address a solution. This instructional model is appropriate for gifted learners because it requires them to learn a greater depth of content and to incorporate multiple areas of knowledge and skill when seeking possible solutions. This model also presents an advanced level of complexity and challenge than typical convergent problems in the regular curriculum.

Suggestions for Staff Expertise and Training

General Education Teacher

All teachers who work with gifted learners should receive training in the characteristics and needs of gifted learners. General Education teachers implementing a problem-based curriculum for gifted learners need to be able to implement the curriculum effectively, differentiating for gifted learners as appropriate through multiple instructional strategies. These teachers need initial and ongoing support to incorporate strategies that allow gifted learners to move at an appropriate instructional pace and at appropriate levels of breadth, depth, and complexity within a problem-based curriculum.

Gifted Intervention Specialist

Gifted Intervention Specialists should be able to train and support General Education teachers in their implementation of a problem-based curriculum for gifted. Specialists also need training in collaborating with classroom teachers to provide ongoing support for incorporating appropriate services for gifted learners based on the program model used within the district.

Level of Cost/Efficiency

Based on cost and efficiency requirements for training and materials for all teachers that provide gifted education services, instructional strategies for high ability learners that focus on the use of problem-based learning for high ability learners is rated Low.

Literature and Research-based References


Abstract [ERIC]: Review of problem-based learning (PBL) finds that innovation is comprised of four elements: an ill-structured problem, substantive content, student apprenticeship, and self-directed learning. Research evidence suggests that PBL is better than traditional instruction on long-term information retention, conceptual understanding, and self-directed learning. Application of the method in classes for gifted students is addressed.
Abstract [ERIC]: How can high schools counteract deterrents to achievement that disadvantaged students face? "Project P-BLISS: Problem-Based Learning in the Social Sciences" presents "hidden" disadvantaged gifted students with a curriculum that first captures their interest and challenges them to realize their true potential.

Abstract [ERIC]: This study found that participants (n=78) in Science, Society and the Future, a problem-based course for gifted high school students, exhibited significant improvement in problem-solving schemes compared to a group of 42 gifted nonparticipants. The pattern of change was not consistent across problem-solving steps.

One hundred sixty seven high school students’ scores on multiple-choice standardized tests were compared after traditional and experimental instruction. In the experimental curriculum students used data and varying perspectives to resolve problems related to a variety of dilemmas such as the Salem witch trials, the use of the nuclear bomb on Hiroshima, and so on. Results indicated that students in problem-based learning classes did not sacrifice content acquisition in American Studies when compared to students learning in more traditional settings.

The William and Mary science units were tested for effectiveness. Pre-post measures suggested student gains in science process skills and higher level thinking in science.

**Practice-based Resources and Materials**

Center for Gifted Education. (1997-2005). William and Mary curriculum for high ability learners Science  
*Dust Bowl*  
*What a Find*  
*Acid, Acid Everywhere*  
*Electricity City*  
*Hot Rods*  
*No Quick Fix*
Continuum of Services Template

Introduction

When implementing a continuum of services, the following document examples will aid in the planning of service and placement options for grade level clusters of gifted students in specific identification areas.

The sample options are intended to guide districts with research-based services and placement models for gifted students identified in the following areas: Superior cognitive, reading/language arts, math, science, social studies, creativity, and visual performing arts. Each template is divided into grade level clusters: K-2; 3-5; 6-8; 9-10; and 11-12. The template examples are to serve as a model and will need to be tailored to specific district needs, program goals, and available resources. A blank template is included for use as a guide in planning and tailoring a continuum of services. The annotated bibliographies contained in subsequent chapters of the toolkit should be used to complete the supporting research-base section in order to support practice with research-based options.

Considerations

Based on the current literature base, the following considerations are recommended for school district leaders to institute when implementing a continuum of services:

- Match the service delivery model to the area of identification
- Consider the research base for the placement and implementation of a specific service or placement model. Be cautious of the difference between research-based information and practice-based options that may not have proven effectiveness with gifted learners.
- Before implementing a continuum of services be sure all components are in place such as the materials needed, professional development required prior to service delivery options, and persons responsible for the oversight and implementation.
- A continuum of services is a general plan to provide a variety of vertical and horizontal service options to better meet the specific needs of gifted learners. However, certain special considerations for special populations are required to meet the needs of these underrepresented groups: the highly gifted, twice-exceptional, low socio-economic status, and English as second language students. When planning for special populations the following accommodations may be appropriate:
  - Trained guidance counselors
  - Scaffolding for critical thinking skills
  - Special small group courses on specific social-emotional needs
  - Multicultural applications in a variety of subject areas
  - Connection of the subject matter to student experiences
  - Grade skipping or other accelerative opportunities
  - Mentorship in a strength content area
  - Bridging activities to scaffold needed experiences and exposure to content
  - Career counseling tailored to the needs of gifted learner
### Continuum of Services Template
**Grade Cluster Example: K – 2nd Grade**

<table>
<thead>
<tr>
<th>Area of Identification</th>
<th>Placement</th>
<th>Service</th>
<th>Person(s) Responsible</th>
<th>Supporting Research (Tacit and Empirical)</th>
</tr>
</thead>
</table>
| Superior Cognitive     | Self-contained classroom for core subject areas | • Replacement of curriculum with research-based, advanced options in all core subject areas  
                         • Higher level thinking skills  
                         • Acceleration of subject content | Principal  
                         Classroom Teacher  
                         Teacher of Gifted | Rogers, 1991; Kulik & Kulik, 1992  
                         Gentry & Owen, 1999  
                         Swiatek, 2000  
                         Vaughn, Feldhusen, & Asher, 1991  
                         Moon, Feldhusen, & Dillon, 1994 |
| Reading /LA            | Targeted flexible grouping (cluster grouping, pull-out, self contained) | • Advanced literature & discussion groups  
                         • Persuasive writing models  
                         • Use of advanced organizers for literary analysis and broad-based concepts | Classroom Teacher  
                         Teacher of Gifted | Rogers, 1998  
                         VanTassel-Baska, Zuo, Avery, & Little, 2002  
                         Halsted, 2002  
                         Elder & Paul, 2001 |
| Math                   | Targeted flexible grouping (cluster grouping, pull-out, self contained) | • Curriculum compacting  
                         • Replacement of the curriculum with more advanced, research-based curriculum  
                         • Targeted subject acceleration | Classroom Teacher  
                         Teacher of Gifted | Rogers, 1998  
                         Reis, Burns, & Renzulli, 1992  
                         Lubinski & Benbow, 1995  
                         Vaughn, Feldhusen, & Dillon, 1994 |
| Science                | Targeted flexible grouping (cluster grouping, pull-out, self contained) | • Emphasis on process skills such as experimental design  
                         • Problem-based learning options  
                         • Contests or science fairs targeted on real-world scientific inquiry projects | Teacher of gifted  
                         Classroom Teacher | VanTassel-Baska, Bass, Reis, Poland, & Avery, 1998  
                         Gagne, 1995  
                         Moon, Feldhusen, & Dillon, 1994 |
| Social Studies         | Targeted flexible grouping (cluster grouping, pull-out, self contained) | • Problem based learning modules of historical events | Teacher of gifted  
                         Classroom Teacher | Herbert, 1993  
                         Gagne, 1995  
                         Moon, Feldhusen, & Dillon, |
<table>
<thead>
<tr>
<th>Cluster grouping</th>
<th>Document analysis of primary documents</th>
<th>Emphasis on multiple perspectives</th>
<th>Creativity Cluster grouping</th>
<th>Choice of creative products in core content areas</th>
<th>Special research-based contests or models such as Future Problem Solving or Destination Imagination</th>
<th>Designated staff</th>
<th>Classroom Teacher</th>
<th>Treffinger, 1986</th>
<th>Torrance &amp; Goff, 1989</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual &amp; Performing Arts Cluster grouping</td>
<td>Choice of products in core areas related to artistic ability</td>
<td>Special contests in the subject area as available</td>
<td>Teacher of Gifted Trained in the Arts</td>
<td>Classroom Teacher</td>
<td>Designated Staff</td>
<td>Gagne, 1995</td>
<td>Kettle, Renzulli, &amp; Rizza, 1998</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Continuum of Services Template

**Grade Cluster Example: 3rd - 5th Grade**

<table>
<thead>
<tr>
<th>Area of Identification</th>
<th>Placement</th>
<th>Service</th>
<th>Person(s) Responsible</th>
<th>Supporting Research (Tacit and Empirical)</th>
</tr>
</thead>
</table>
| **Superior Cognitive** | Self-Contained Classroom for all core subject areas | • Replacement of the curriculum with more rigorous and research-based options  
• Higher level thinking skills  
• Acceleration of content | Teacher of Gifted | Rogers, 1991  
Kulik & Kulik, 1992  
VanTassel-Baska, Willis, & Meyer, 1989 |
| **Reading /LA** | Pull-Out | • Advanced literature & discussion groups  
• Persuasive writing models  
• Use of advanced organizers for literary analysis and broad-based concepts | Teacher of Gifted | Rogers, 1998  
VanTassel-Baska, Zuo, Avery, & Little, 2002 |
| **Math** | Cluster Grouping within the classroom | • Curriculum compacting  
• Replacement of the curriculum with more advanced, research-based curriculum  
• Targeted subject acceleration | Principal  
Classroom Teacher with the assistance of the Teacher of Gifted | Gentry & Owen, 1999  
Reis, Burns, & Renzulli, 1992  
Lubinski & Benbow, 1995 |
| **Science** | Pull-Out | • Emphasis on process skills such as experimental design  
• Problem-based learning options  
• Contests or science fairs targeted on real-world scientific inquiry projects | Teacher of Gifted  
Designated School Staff | VanTassel-Baska, Bass, Reis, Poland, & Avery, 1998  
Gallagher, 2000  
Gagne, 1995 |
| **Social Studies** | Cluster Grouping within the classroom | • Problem based learning modules of historical events  
• Document analysis of primary documents  
• Emphasis on multiple perspectives | Classroom teacher with assistance from the Teacher of gifted Principal | Herbert, 1993  
Moon, Feldhusen, & Dillon, 1994  
Gagne, 1995  
Gallagher & Stepien, 1996 |
| **Creativity** | Cluster Grouping within the classroom | • Choice of creative products in core content areas  
• Special research-based contests or models such as Future Problem Solving or Destination Imagination | Designated Staff  
Classroom Teacher | Treffinger, 1986  
Torrance & Goff, 1989 |
| **Visual & Performing Arts** | Pull-Out – Special Classes | • Choice of products in core areas related to artistic ability  
• Special contests in the subject area as available | Teacher of Gifted Trained in the Arts  
Classroom Teacher  
Designated Staff | Gagne, 1995  
Kettle, Renzulli, & Rizza, 1998 |
<table>
<thead>
<tr>
<th>Area of Identification</th>
<th>Placement</th>
<th>Service</th>
<th>Person(s) Responsible</th>
<th>Supporting Research (Tacit and Empirical)</th>
</tr>
</thead>
</table>
| Superior Cognitive     | Self-Contained Classroom for all core subject areas | • Replacement of the curriculum with more rigorous and research-based options  
• Higher level thinking and reasoning skills  
• High school credit options for advanced courses | Content specialist trained in gifted | Rogers, 1991  
Kulik & Kulik, 1992  
VanTassel-Baska, Willis, & Meyer, 1989 |
| Reading/LA             | Self-Contained Classroom for Reading (special class) | • Subject acceleration by replacement of curriculum with advanced reading selections  
• Literary analysis, reasoning, and persuasive writing focus  
• High school credit options for advanced courses | Content specialist trained in gifted | Rogers, 1998  
VanTassel-Baska, Zuo, Avery, & Little, 2002 |
| Math                   | Self-Contained Classroom for Mathematics (special class) | • Diagnostic-prescriptive approach with replacement of the curriculum  
• Three years in two subject acceleration  
• High school credit for advanced courses | Content specialist trained in gifted | Gentry & Owen, 1999  
Lubinski & Benbow, 1995  
Colangelo, Assouline, & Gross, 2004 |
| Science                | Self-Contained Classroom for Science (special class) | • Problem-based learning models in science  
• Advanced content with a focus on scientific inquiry, processes, and reasoning  
• Subject acceleration with high school credit options | Content specialist trained in gifted  
Designated School Staff | VanTassel-Baska, Bass, Reis, Poland, & Avery, 1998  
Colangelo, Assouline, & Gross, 2004  
Gagne, 1995  
VanTassel-Baska, 2004 |
<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Program Description</th>
<th>Special Features</th>
<th>Qualification</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Studies</td>
<td>Self-Contained Classroom for Social Studies (special class)</td>
<td>• Special contests or activities in the science areas</td>
<td>Content specialist trained in gifted Designated Staff</td>
<td>Herbert, 1993 Feldhusen, Moon, &amp; Dillon, 1994 Gagne, 1995 Little, Feng, Rogers, &amp; VanTassel-Baska, 2005</td>
</tr>
<tr>
<td>Creativity</td>
<td>Cluster Grouping within the classroom</td>
<td>• Subject acceleration by replacement of curriculum • Focus on multiple perspectives, issues, and points of view • Engagement in special programs or service-learning projects (e.g., community service options, Model United Nations, Debate Clubs)</td>
<td>Designated Staff Classroom Teacher</td>
<td>Treffinger, 1986 Torrance &amp; Goff, 1989</td>
</tr>
<tr>
<td>Visual &amp; Performing Arts</td>
<td>Pull-Out – Special Classes</td>
<td>• Choice of products in core areas related to artistic ability • Special contests in the subject area as available</td>
<td>Teacher of Gifted Trained in the Arts Designated Staff</td>
<td>Gagne, 1995 Kettle, Renzulli, &amp; Rizza, 1998</td>
</tr>
</tbody>
</table>
# Continuum of Services Template

## Grade Cluster Example: 9th - 10th Grade

<table>
<thead>
<tr>
<th>Area of Identification</th>
<th>Placement</th>
<th>Service</th>
<th>Person(s) Responsible</th>
<th>Supporting Research (Tacit and Empirical)</th>
</tr>
</thead>
</table>
| Superior Cognitive     | Self-Contained special classes | • International Baccalaureate (IB) courses  
• Advanced Placement Courses in at least 4 areas (Subject acceleration)  
• Other special courses as applicable                                                                 | Content specialists trained in gifted & IB/AP                                          | Rogers, 1991; Kulik & Kulik, 1992  
Nugent & Karnes, 2002  
Tookey, 1999  
Cox & Daniel, 1983  
Poelzer & Feldhusen, 1997 |
| Reading /LA            | Special Class        | • Advanced Placement Courses  
• Subject Acceleration  
• Focus on Literary Analysis and Higher Level Reasoning Skills                                                                 | Content specialist trained in gifted and AP                                            | Nugent & Karnes, 2002  
Feldhusen & Kennedy, 1989  
VanTassle-Baska, 2001 |
| Math                   | Special Class        | • Advanced Mathematics Courses (AP)  
• Applied mentorship in mathematics                                                                 | Content specialist trained in gifted                                                  | Feldhusen & Kennedy, 1989  
Swiatek, 2000  
Subotnik & Straus, 1994 |
| Science                | Special Class        | • Advanced Science Courses (AP)  
• Special contests or real-world problem based learning activities in the sciences  
• Participation in special process-based activities or contests (e.g., Science Fair)                                             | Content specialist trained in gifted                                                 | Gallagher, Step, Sher, & Workman, 1995; Gallagher, 2000  
Colangelo, Assouline, & Gross, 2004  
Herr, 1993  
Southern & Jones, 1991 |
| Social Studies         | Special Class        | • Advanced Social Studies Courses (AP)  
• Problem-based learning options in the social studies content areas  
• Special contests or options (e.g., Mock Trial, Model United Nations)                                                                     | Content specialist trained in gifted                                                  | Feldhusen & Reilly, 1983  
Gallagher & Stepien, 1996  
Curry, MacDonald, & Morgan, 1999  
Muratori, Colangelo, & Assouline, 2003 |
| Creativity             | Special Class        | • Choice of products in content area requiring acquisition of content and the creation of new material within a specific content domain  
• Special courses or contests                                                                                                                | Designated Staff  
Trained content area teacher                                                          | Treffinger, 1986  
Anderson & Krathwohl, 2001  
Torrance & Goff, 1989  
Ambrose, Allen, & Huntley, 1994 |
| Visual & Performing Arts | Special Class       | • Accelerated art and/or music courses  
• Dual enrollment  
• Internship or mentorship in specific area  
• Special contests and experiences                                                                                                           | Teacher of Gifted  
Trained in the Arts  
Classroom Teacher  
Designated Staff                                                          | Gagne, 1995  
Ambrose, Allen, & Huntley, 1994  
Kettle, Renzulli, & Rizza, 1998 |
## Continuum of Services Template
### Grade Cluster Example: 11th - 12th Grade

<table>
<thead>
<tr>
<th>Area of Identification</th>
<th>Placement</th>
<th>Service</th>
<th>Person(s) Responsible</th>
<th>Supporting Research (Tacit and Empirical)</th>
</tr>
</thead>
</table>
| Superior Cognitive     | Self-Contained special classes or Off-campus special classes/programs | • International Baccalaureate (IB) courses  
• Advanced Placement Courses in at least 4 areas  
• Dual enrollment between college and high school with college credit  
• Early graduation | Content specialists trained in gifted & IB/AP | Rogers, 1991; Kulik & Kulik, 1992  
Nugent & Karnes, 2002  
Tooke, 1999  
Cox & Daniel, 1983  
Poelzer & Feldhusen, 1997 |
| Reading /LA            | Special Class | • Advanced Placement Courses  
• Post-Secondary Enrollment in Reading/LA | Content specialist trained in gifted and AP | Nugent & Karnes, 2002  
Feldhusen & Kennedy, 1989  
VanTassel-Baska, 2001 |
| Math                   | Special Class | • Advanced Mathematics Courses (AP)  
• Dual enrollment between college and high school with college credit  
• Applied mentorship in mathematics | Content specialist trained in gifted | Feldhusen & Kennedy, 1989  
Swiatek, 2000  
Subotnik & Strauss, 1994 |
| Science                | Special Class | • Advanced Science Courses (AP)  
• Dual enrollment options  
• Mentorship or Internship in a specific science domain | Content specialist trained in gifted  
Designated School Staff | Gallagher, Stepien, Sher, & Workman, 1995; Gallagher, 2000  
Colangelo, Assouline, & Gross, 2004  
Herr, 1993  
Southern & Jones, 1991 |
| Social Studies         | Special Class | • Advanced Social Studies Courses (AP)  
• Dual enrollment options  
• Applied Internship in area of social studies | Content specialist trained in gifted  
Designated Staff | Feldhusen & Reilly, 1983  
Gallagher & Stepien, 1996  
Curry, MacDonald, & Morgan, 1999  
Muratori, Colangelo, & |
<table>
<thead>
<tr>
<th>Interest</th>
<th>Special Class</th>
<th>Teacher of Gifted Trained in the Arts</th>
<th>Designated Staff</th>
<th>Assouline, 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity</td>
<td>Special Class</td>
<td>Classroom Teacher</td>
<td>Designated Staff</td>
<td>Treffinger, 1986</td>
</tr>
<tr>
<td></td>
<td>• Choice of products in content area requiring</td>
<td></td>
<td>Trained content area teacher</td>
<td>Anderson &amp; Krathwohl, 2001</td>
</tr>
<tr>
<td></td>
<td>acquisition of content and the creation of new</td>
<td></td>
<td></td>
<td>Torrance &amp; Goff, 1989</td>
</tr>
<tr>
<td></td>
<td>material within a specific content domain</td>
<td></td>
<td></td>
<td>Ambrose, Allen, &amp; Huntley, 1994</td>
</tr>
<tr>
<td></td>
<td>• Internship or mentorship</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>within a specific content domain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual &amp; Performing Arts</td>
<td>Special Class</td>
<td></td>
<td>Teacher of Gifted Trained in the Arts</td>
<td>Gagne, 1995</td>
</tr>
<tr>
<td></td>
<td>• Accelerated art and/or</td>
<td></td>
<td>Classroom Teacher</td>
<td>Ambrose, Allen, &amp; Huntley, 1994</td>
</tr>
<tr>
<td></td>
<td>music courses</td>
<td></td>
<td>Designated Staff</td>
<td>Kettle, Renzulli, &amp; Rizza, 1998</td>
</tr>
</tbody>
</table>
### Continuum of Services

**Grade Level Cluster _____**

<table>
<thead>
<tr>
<th>Area of Identification</th>
<th>Placement</th>
<th>Service</th>
<th>Person(s) Responsible</th>
<th>Supporting Research (Tacit and Empirical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superior Cognitive</td>
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<tr>
<td>Reading /LA</td>
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<td></td>
</tr>
<tr>
<td>Math</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
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</tr>
<tr>
<td>Social Studies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creativity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual &amp; Performing Arts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section VI:

Cross Analyses Findings

By Joyce VanTassel-Baska
Section VI: Cross Analyses Findings

Major themes across the data sources of the state survey, case studies of five districts, and a comprehensive review of the service delivery literature focus on the following areas:

1. **Lack of mandated services with commensurate funding thwarts program service delivery.**
   In all the data sets we examined from this study, districts were vocal about the need for adequate funding to support service delivery options. Case studies documented the need for expanded options and even “bare bones” opportunities for gifted learners to be put in place. Survey data including EMIS suggests that services are not keeping pace with identification and that special populations of gifted learners, even when identified, are not receiving appropriate and differentiated services. Since the focus of this project is continuum of services, we would be remiss to not highlight this finding as a primary one.

2. **Most districts lack sufficient infrastructure to carry out gifted program development tasks at an adequate level.**
   Commensurate with the problem of limited services due to the lack of a mandate and limited funding is also the unintended consequence of limited resources being employed to address gifted programs. According to the survey data, at the coordinator level, for example, only 59% of the districts have a fulltime person in this field. Almost 30% are assigned partial responsibility for gifted education along with other areas including direct teaching. This translates into a serious leadership gap. Coupled with a lack of preparation in gifted education for district leaders, Ohio cannot move forward in providing a continuum of services without the dedication of more resources to the effort. It is also apparent from the case study districts that supplementary resources neither human nor material are being put into gifted education programs at the local level to take up the slack from state funding limitations.

3. **Specific program development areas of need across districts appear to be differentiated goals and outcomes for gifted learners, program evaluation, gifted student assessment, rigor in curriculum for gifted students, the unevenness of curriculum implementation, differentiation in the regular classroom, and the use of acceleration. Gaps in documents and services are highly evident.**
   In a 1995 Ohio gifted program evaluation study done by one of the Principal Investigators on this study, findings and recommendations suggested the need for more emphasis on key factors in program development. Based on this study’s data sources of survey and case study, it appears those same factors are still missing from the Ohio picture of services to gifted learners. Districts have not created a curriculum framework for their programs, with measurable and differentiated outcomes for gifted learners. They have not assessed gifted student learning in multiple ways that document authentic learning at an advanced level. They do not systematically employ annual evaluation plans to use in program improvement. The curriculum implementation, where observed in case study districts, was uneven and often lacking in rigor and evidence of differentiation. The best documented approach to serving the gifted (i.e., acceleration) was underutilized. In general, the program development landscape in Ohio is uneven, with some districts doing well at certain grade levels and in certain subjects, but the overall image is of spotty attention to the systems that would serve as a basis to grow programs.
4. **Limited options prevail at each grade level coupled with limited contact time.**
Because Ohio does not control for contact time in regulation, districts are serving gifted students on unrealistic models. One hour per week is not a best practice time frame because it is insufficient for meaningful learning to occur and be assessed even though case study visits confirmed it is a commonly used time frame for in school services and some pullout programs. It leads to frivolous and disconnected learning which in turn contributes to the perception that gifted programs are peripheral to the central business of schools. Because time frames for the program are so limited, student options are nonexistent. One program option is offered for all gifted learners at a given grade level, regardless of their ability level or aptitude area.

5. **Stakeholder perceptions favor an in-school model yet specialists’ time is stretched too thin for delivery purposes.**
In school and in classroom options have increased as a service delivery mechanism in Ohio without the commensurate increase in resources to carry them out in an equitable fashion. As seen in the statewide survey, flexible grouping and multiage grouping appear to be used most frequently, suggesting that within classroom strategies play a large role in delivery of services. Given the research on lack of differentiation in regular classrooms across a decade (see Westberg et al.), there is real concern with this option becoming so popular in Ohio as it makes program definition and service difficult to define and assess. The resource consultation model, frequently employed in gifted programs to address this delivery approach, is no match for the numbers of students needing to be served in relation to available personnel to carry out the task.

6. **There is a need for professional development for teachers who have gifted students the majority of time in school.**
Survey data suggest that professional development is viewed by gifted program coordinators to be one of the three most important program needs, especially for regular classroom teachers who have responsibility for program delivery to these students the majority of school time. Case study data substantiate the need for greater attention to differentiated curriculum that is designed at a rigorous level and delivered by knowledgeable personnel. Research data also suggest the need for professional development in gifted education targeted at the regular classroom teacher.

7. **Curriculum differentiation is tied to teacher-developed units or texts that are neither tested nor aligned with state standards indicators or benchmarks and nor are they research-based for use with gifted learners.** Differentiation strategies appear to be used more prevalently at elementary level.
Only about half of Ohio districts, according to the survey data, have aligned the content standards with the curriculum used with gifted learners. Except in Advanced Placement classes, where the alignment is implied by the level of the subject matter, gifted programs need to be aligned with the rest of education in respect to the focus for learning within subject areas. Moreover, homegrown units of study with no accountability appear still to be the norm in Ohio, based on survey results and case study review of curriculum documents. In an age of research-based curriculum to be employed as models for development or directly in the classroom, there is little reason for this situation to persist in gifted programs.
8. **Service to underrepresented groups appears to be limited but favors Learning Disabled (LD) students over low income students.**

Service delivery to underrepresented groups of gifted learners lags behind the identification of these groups if one examines the EMIS data in comparison to the survey data. Moreover, the service emphasis appears to focus on learning disabled gifted students as the highest priority, even where the demographics of Ohio would suggest that the largest group would be low income students of all ethnic backgrounds.

9. **Strengths of programs appear to lie in the quality of the personnel and the quality and extent of in-school and out-of-school options provided. Yet the strengths of individual teachers affect program emphases in ways that may limit program development.**

While one of the major strengths of Ohio’s program lies in the quality of dedicated teachers as attested to by coordinators in the survey response and by stakeholder focus groups in the onsite case studies, the issue of programs being designed around teacher interests and strengths arises. This situation gives rise to idiosyncratic program options that only have a shelf life for the duration of a teacher’s tenure in the program. Moreover, the quality of options many times cited by stakeholders in case study districts were out of school provisions such as contests and university-based options. In-school opportunities cited in the survey data suggest that independent and group projects are the predominant option for gifted learners at all grade levels. At secondary level, the Advanced Placement program was cited as the most prevalent option.

10. **Stakeholder groups of parents, students, teachers, and administrators view their own district programs in a positive to very positive light, especially in comparison to other districts.**

In the case study data, it was apparent that all stakeholder groups were reticent to criticize the services provided to gifted students in their district for fear of losing what services they currently enjoyed. By the same token, they were quick to suggest that their services were superior to other districts they knew and that the quality of experience in gifted programs was generally positive for students.

11. **Services at specific grade levels, and in specific ability domains are limited and fragmented across the districts. Gaps in service delivery (i.e. grade level, content area, and relevant domain) were highly evident in case study districts.**  

Although EMIS data, survey data, and state plan data suggest that districts are providing a full continuum of services to gifted students in Ohio, case study data suggest the fallacy of these reports. Gaps in services were particularly evident at early elementary levels, middle school, and the early high school years before Advanced Placement options were routinely available.

12. **Even where service delivery is provided, it appears often not to be matched to students’ identified abilities. Rather, it becomes one program model for all identified gifted learners.**

The issue of optimally matching services to the needs, abilities, and interests of the child is a concept that is not being practiced to any extent by local districts in Ohio. The push to identify is strong but the resultant programming is much more limited and based on district resources and other constraints. Case study data suggest that only one option at each level is offered to gifted learners, attesting to this problem.
13. There is a great need for the three C’s of: communication, comprehensiveness of program and curricula and coherence in service options & delivery. Written Education Plans, for example, are not written for individuals but rather for groups and may not be systematically implemented.

Problems cited in the case study data and derived from coordinator comments on the survey suggest that Ohio needs a comprehensive strategy to address issues of communication about gifted programs across stakeholder groups within districts and across districts, the comprehensive articulation of programs and curricula across grade levels and content areas, and coherence between identification, program model, and delivery approaches. Lack of these big C’s impedes the progress that needs to occur for service to these learners.

14. Fewer students are serviced within school districts because of inequitable application of identifiable criteria.

Conflicting data from EMIS and the surveys coupled with case study observations show a pattern of inequitable service within and across districts based on lack of adequate funding to deliver appropriate and differentiated options for all identified students. Districts are artificially imposing standards of selection for placement in programs to limit the number of eligible students even if students meet state criteria for identification. This situation is untenable for gifted programs.

15. Gifted service is a “stand-alone service” not linked to other programs, services, or content standards.

Evidence from case study data and lack of evidence from survey data suggest that the gifted programs in Ohio are operating as separate silos rather than collaborating with others in school districts that could support the service efforts with these learners. Linkages to general staff development opportunities, linkage to content-based efforts, linkage even to AP program coordination and policy appear to be limited or non existent in Ohio plans for gifted education.

16. While the majority of districts have clearly benefited from Ohio funding and regulations, most appear to be in a “maintenance mode” or are facing reduction of staff and consequently services.

EMIS data suggest little movement on the part of districts in respect to number of students serviced or services provided. About 68% of districts report no change while 20% report increases and 10% report decreases in both categories. Yet survey data suggest that the third greatest need for gifted programs is expanded services and case study visits confirm this need as a reality.

17. State assessments are used as the predominant tool for assessing gifted student learning and gifted program effectiveness. Yet, these data do not drive program improvement.

In some districts, performance-based assessment tools and portfolios are employed yet not utilized for program decision-making.

According to the survey data, while over half of districts use performance-based assessment as a tool to assess gifted learners and about a third employ portfolios, close to 80% of districts draw inferences about gifted student learning from the Ohio Assessment Test. Research-based best practice calls for multiple approaches to be employed in assessing gifted student learning and
that these approaches be used for program improvement. No evidence from any data source suggests that these processes are being employed in Ohio on a systematic basis.

18. Finally, the literature review and toolkit suggest the need for:
   - Research-based practices being employed in all gifted programs including:
     - Acceleration (e.g., compacting, diagnostic–prescriptive approaches)
     - Grouping (cluster, pullout, self-contained)
     - The use of differentiated curriculum already developed and used with gifted populations
     - Targeted instructional strategies for gifted learners that can be used in all classrooms (e.g., inquiry, question-asking, problem-based learning)
     - Professional development and training in gifted education for teachers and administrators.

These data further document a lack of research support for interdisciplinary and independent study options and the gap between research and several practice recommendations.

The literature review and toolkit emphases taken together paint a picture of clear support for the key strategies of acceleration in all forms, grouping gifted learners together in cluster, pullout and/or self-contained settings for a substantial portion of the school week, the use of research-based curriculum interventions and instructional strategies, and targeted professional development for relevant stakeholders. It should also be noted that a paucity of research exists to support interdisciplinary curriculum and independent study options not tied to content or a defined program structure. Another finding from these reviews suggests that practice recommendations are not always closely aligned to the research evidence, creating confusion in practitioners’ minds about what works.

Conclusions

The major research questions raised in this study have been answered through the data sources explored. Appropriate instruction and services are far from comprehensive or coherent with many gaps apparent at grade levels, in content areas, and in domains. Research-based best practice appears to be underutilized as seen from both survey data and on-site observations. Strengths and weaknesses of service settings have been explored in the literature review and toolkit sections of this study, suggesting that each model’s effectiveness is highly dependent on the interaction effort of grouping gifted learners together for a given amount of time and providing differentiated curriculum that is vigorous and challenging. Major barriers to a comprehensive continuum of services found in this study included the findings cited above; namely, that the lack of a mandate and related funding prevents sufficient resources being applied by local districts to mount such services. Lack of solid program and curriculum frameworks being in place further limits the realization of effective provision. The toolkit in this report provides many ideas for improvement. The following recommendations are meant to provide further guidance for next steps in using available resources and proactively improving Ohio services to gifted learners.
Section VII

Implications and Recommendations

By Joyce VanTassel-Baska
Section VII: Implications and Recommendations

1. Mandate services & develop a plan for funding.
Overall, this study and its findings suggest that Ohio must move forward with providing mandated services and commensurate funding to all districts in the state. Too many of the problems identified in the study stem from lack of attention to this need including the lack of service to many gifted learners, the lack of optimal match between ability and program emphasis, and the paucity of viable program options at all levels of schooling. Currently, many states do mandate such services and do so under different funding models but predominantly use a per pupil allocation model. Ohio may want to study other state funding approaches to consider best options. A study of Virginia and South Carolina was done and published in the last five years by Baker et al. This study, the first of its kind, may be helpful.

2. Create relevant policies to support mandated services.
Just as Ohio needs to mandate services, it also must create relevant policies to accompany the legislation that are research-based. Model service policies may be found in several of the policy documents cited in the references for the literature review. Continuum of services requires special attention to comprehensive articulation of curriculum as well as program from K-12, calling for both curriculum frameworks with specified goals, outcomes, and assessment approaches but also a well-defined scope and sequence of options at each stage of development. Explicit policies on grouping, acceleration and service to underrepresented populations must be a part of such an effort. The chart for continuum of services is a good beginning for this and may be found in the Tool Kit section of this report.

3. Tighten regulations regarding equity & match in identification & service delivery.
Equitable identification practices have plagued the field of gifted education for some time. The fact that Ohio is identifying but not serving groups of learners who could benefit and arbitrarily deciding which learners do get service and which don’t by questionable procedures in local districts leaves the state vulnerable to Office of Civil Rights (OCR) inquiries and potential lawsuits where cutoffs for service have been raised on instruments that do not sufficiently discern the differences sought or claimed.

4. Promote the use of research-based practice.
Both the literature review and the Tool Kit in this report suggest many ways that best practice could be followed in Ohio. Many of the strategies for provisions and placement have a long history of research. Some are more recent but taken together they paint a portrait and provide a blueprint of how to improve practice at a state-wide level. It requires a concerted effort at the state leadership level, however, to ensure that districts use such recommendations and are accountable for the results in assessment of learners.

5. Address contact time issue.
In order for districts to provide meaningful services to gifted populations, they must employ a minimum contact time for such services. Whether the placement model employed is cluster grouping in the regular classroom, pullout, or self-contained, the issue of contact time for differentiated curriculum and instruction is a primary consideration. Some states use 4-5
hours per week as a minimum standard. Ohio may want to consider contact time as a part of the policy template for services as it interacts well with the requirements for provision of services.

6. **Monitor districts on site for evidence of implementation and effectiveness of curriculum and of a continuum of services by grade level, by subject, and by area of giftedness.**

The case study data strongly suggest that the state needs to maintain an on-site review process for gifted programs to ensure that written plans are being implemented and being done so in an effective way. While state surveys and reports suggest that a continuum of services exists across levels, subjects, and domains, the onsite visits suggested otherwise. Administrative review teams need to focus on gifted program standards as a basis for such efforts. These standards are available through the office of the National Association of Gifted Children in Washington DC and on their website. A concerted effort to involve all districts in a self-monitoring process would also be fruitful, leading to the use of data for program improvement purposes. Arkansas has a model project to engage districts in such a process.

7. **Communicate “what works” in Ohio gifted education and engage superintendents and principals in understanding the need for gifted services.**

Communication links need to be strengthened between the Ohio gifted community and the regular education community on the need for services to gifted populations. Two strategies may be essential to making that happen. One would be to showcase gifted options that have been successful and continue to develop gifted learners to high levels of performance. The Midwest Talent Search and Advanced Placement are two examples where Ohio has a record of high performance results and a statewide database to support claims. There may be others as well. Showcasing could be done at relevant state meetings, for local Boards of Education, in newsletters, on the state website, etc. Another strategy would be to target decision-makers for the message about what works. Board members, superintendents, and principals all share responsibility for enhancing student performance. Focusing on these populations for crafting the message would be a critical next step in garnering support for mandated services in Ohio.

8. **Utilize existing local and state resources to augment and supplement gifted service options.**

There will never be enough money in state gifted program budgets to meet all the needs for program services. However, Ohio leadership could create a shared resource model that systematically tapped into other resources already available for assistance. Linking the efforts of gifted education to the NCLB state funding, to Advanced Placement funding, to special population efforts, and to major initiatives to provide professional development in all the content areas would broaden the pool of dollars that could be employed to support gifted students. Since gifted students are a part of the landscape of schools, there should be a fair share orientation developed for such activities. State leadership in this area of resource-sharing could be used then as a model for districts to do likewise, thus ensuring that gifted education is reaching out to other constituencies and is viewed as part of the larger efforts for enhanced learning for all students.
Appendix A:

Focus Group and Interview Questions for Case Studies
Appendix A: Focus Group and Interview Questions for Case Studies

Spring, 2005
Ohio: Continuum of Services
Focus Group & Interview Questions
(Educator and Administrator Version)

1. What are the different ways in which gifted students are served in your district?

2. How do you differentiate curriculum & instruction for gifted students in your district?

3. What are the strengths of the gifted services your district employs?

4. What are barriers or limitations which prevent the provision of a comprehensive continuum of services for your gifted students?

5. How do you know your gifted continuum of services is effective? What criteria are you using to make this judgment?

6. How do you assess gifted students’ performance? What criteria are you using to make this judgment?
Appendix B:

Statewide Gifted Coordinator Survey
Appendix B: Statewide Gifted Coordinator Survey

Ohio School District Gifted Program Survey for the College of William and Mary Continuum of Services ODE Research and Development Project

1. Name of School District: _________________________________

2. School District IRN: ______________

3. Position of Individual Completing This Survey (check all that apply if completed by a team)
   _____ a. Gifted Coordinator
   _____ b. Gifted Intervention Specialist
   _____ c. Other(s)- please list ________________________________

4. Employer of Individual Completing This Survey (check all that apply if completed by a team)
   _____ a. Employed by the district named above
   _____ b. Providing services to district named above but employed by another organization

5. Credential of Individual Completing This Survey (check all that apply if completed by a team)
   _____ a. No gifted education related license, validation, or endorsement
   _____ b. Temporary Gifted Intervention Specialist License Only
   _____ c. Provisional or Professional Gifted Intervention Specialist License
   _____ e. Gifted validation or endorsement added to another certificate or license
I. Curriculum and Instruction/Differentiation

6. Which of the following goals does the district employ at each level in delivering curriculum and instruction to gifted students? (Please check all that apply. E.S., M.S. and H.S. stand for elementary, middle and high school respectively.)

<table>
<thead>
<tr>
<th></th>
<th>E.S.</th>
<th>M.S.</th>
<th>H.S.</th>
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<tbody>
<tr>
<td>a. To enrich and extend the core curriculum</td>
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<td>b. To integrate multiple disciplines into an area of study</td>
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<tr>
<td>c. To allow for the in-depth learning of a self-selected topic within the area of study</td>
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<tr>
<td>d. To develop independent or self-directed study skills</td>
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<tr>
<td>e. To develop productive, complex, abstract, and/or higher-level thinking skills</td>
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<td>f. To focus on open-ended tasks</td>
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<td>g. To develop research skills and methods</td>
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<tr>
<td>h. To integrate basic and higher level thinking skills into the core curriculum</td>
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<tr>
<td>i. To encourage the development of products that challenge existing ideas and produce “new” perspectives</td>
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<td>j. To encourage the development of self-understanding, i.e., recognizing and using one’s abilities, becoming self-directed, appreciating likenesses and differences between self and others</td>
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<tr>
<td>k. To evaluate student outcomes by using appropriate and specific criteria through self-appraisal, criterion referenced, and/or standardized instruments</td>
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<tr>
<td>l. Other:</td>
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</table>
7. What curricula are mainly used with the district’s gifted students? (Please check all that apply.)

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<tr>
<th></th>
<th>E.S.</th>
<th>M.S.</th>
<th>H.S.</th>
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<tbody>
<tr>
<td>a. Teacher-developed curriculum units of study</td>
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<tr>
<td>b. Packaged curriculum such as William &amp; Mary curriculum, Philosophy for Children, Junior Great Books, etc.</td>
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<tr>
<td>c. Advanced textbooks (at least one grade level above)</td>
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<tr>
<td>d. Regular textbooks</td>
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<tr>
<td>e. Critical/creative thinking skills materials</td>
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<tr>
<td>f. Self-esteem, social emotional issue discussion materials</td>
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<td>g. Group or individual projects</td>
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<td>h. Technology courses (e.g., EPGY, Apex Online, etc.)</td>
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<tr>
<td>i. Advanced Placement or International Baccalaureate Curriculum</td>
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<tr>
<td>j. Other (please specify):</td>
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</tbody>
</table>

8. Do you have services differentiated for economically disadvantaged or culturally diverse gifted learners?

___a. Yes
___b. No

9. Do you have services differentiated for twice-exceptional gifted students (e.g., learning disabled/gifted)?

___a. Yes
___b. No

10. If you answered “yes” to either of the preceding questions (8 or 9), which of the following strategies do you systematically use to accommodate these special populations of gifted students? (Please check all that apply.)

___a. Use of multicultural materials
___b. Bibliotherapy
___c. Mentoring
___d. Family orientation/training
___e. Tutoring
___f. Home visits/recruiting
___g. Counseling
___h. Discussion groups

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i. Special “bridging” programs (e.g., skill development in reading or math)

j. Other special classroom adaptations or strategies (Please specify.):

II. Organizational Arrangements

11. Which are the district’s predominant grouping patterns for services to gifted students at each level of the system? (Check all that you employ for 30% or more of the identified gifted population.)

<table>
<thead>
<tr>
<th>Grouping Pattern</th>
<th>K-2</th>
<th>3-5</th>
<th>M.S.</th>
<th>H.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Ability-grouped in specific subjects</td>
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<tr>
<td>b. Flexible grouping (group for subjects as needed)</td>
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<tr>
<td>c. Cross-grade level (students advance to different grade level in specific subject area)</td>
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<tr>
<td>d. Multi-age classroom with gifted acceleration</td>
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<tr>
<td>e. Other (Please elaborate on any grouping patterns not listed above that you employ. Do not list any grouping patterns [e.g. cluster grouping, pull-out, self-contained classroom] that are covered by EMIS program codes or course codes):</td>
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</tbody>
</table>

12. What type of acceleration options did the district employ in its gifted program this year at each school level? (Please put a check for those that are offered by level.)

<table>
<thead>
<tr>
<th>Acceleration Option</th>
<th>K-2</th>
<th>3-5</th>
<th>M.S.</th>
<th>H.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Telescoping (e.g., complete 2 years in one)</td>
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<tr>
<td>b. Content acceleration (single subject grade skipping)</td>
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<tr>
<td>c. Curricular compacting/content acceleration</td>
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<tr>
<td>d. Cross grade grouping</td>
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<tr>
<td>e. Testing out (credit given for entire course)</td>
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<tr>
<td>f. International Baccalaureate</td>
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<tr>
<td>g. Other (please specify. Do not list any acceleration options [grade skipping, PSEO, early entrance, and Advanced Placement] that are covered by EMIS program codes):</td>
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</tbody>
</table>
13. What type of documents guide and/or govern the district’s K-12 continuum of services? (Please check all that apply.)

___ a. A K-12 curriculum framework (goals & outcomes for gifted learners)
___ b. A scope and sequence of curriculum options for gifted learners in each subject area
___ c. A menu of service options at each grade level for gifted learners
___ d. Gifted standards aligned with state standards
___ e. Policy on continuum of services
___ f. Policy listing objective criteria required to receive each service
___ g. Policy on transition points (ensure continuity between grades and levels)
___ h. Parent/Community brochure of program options
___ i. Gifted strategic plan
___ j. Other (please explain):

III. Student Performance and Evaluation

14. What approaches to gifted program evaluation has the district employed? (Please check all that routinely apply to your evaluation procedure.)

___ a. Student performance/achievement data analysis
___ b. Student satisfaction data analysis
___ c. Questionnaires to constituent groups regarding perceptions of the gifted program:
      ___ i. All teachers
      ___ ii. Teachers of the gifted
      ___ iii. Administrators
      ___ iv. Parents
___ d. Classroom observations by gifted administrator
___ e. Classroom observations by building administrator
___ f. Focus groups or interviews with relevant groups
___ g. External evaluation
___ h. Other (please specify) ____________________________
15. What approaches to gifted student assessments has the district employed? (Please check all that routinely apply to the district’s assessment procedures.)

___a. Value-added assessment
___b. Performance-based assessment
___c. Portfolio assessment
___d. Academic contest comparisons to other gifted students – statewide or nationally
___e. State required tests (Proficiency and/or Achievement)
___f. Pre/Post Test data
___g. Advanced placement scores
___h. Standardized assessments across grade levels
___i. Other ____________________________

IV. Administration/Change

16. Rank order (1,2,3) the three most powerful forces that have positively affected the delivery of gifted education services in the district within the last several years.

___a. Gifted rules/regulations/plan (e.g. ORC 3301-51-15)
___b. Gifted unit funding
___c. Gifted identification money
___d. Site-based management decision making
___e. National legislation (e.g. No Child Left Behind)
___f. Parental demands for more or improved services
___g. Political philosophy of the school district
___h. State testing requirements
___i. State report card
___j. Value added assessment
___k. Technical Assistance from the Ohio Department of Education
___l. State-adopted Academic Content Standards/model lessons
___m. Other (please specify) ____________________________
17. Rank order (1,2,3) the three most powerful forces that have negatively affected the delivery of gifted education services in the district within the last several years.

___a. Gifted rules/regulations/plan (e.g. ORC 3301-51-15)
___b. Gifted unit funding
___c. Gifted identification money
___d. Site-based management decision making
___e. National legislation (e.g. No Child Left Behind)
___f. Parental demands for more or improved services
___g. Political philosophy of my school district
___h. State testing requirements
___i. State report card
___j. Value added assessment
___k. Technical Assistance from the Ohio Department of Education
___l. State-adopted Academic Content Standards/model lessons
___m. Other (please specify) ___________________________
18. Rank order (1, 2, 3, 4, 5) the five areas of gifted education that are in greatest need of attention in order for gifted education services in the school system to be optimal. (1=greatest need for attention, 2=second greatest need for attention, etc.)

___ a. Representation of culturally diverse and/or economically disadvantaged students in the gifted program
___ b. Funding for gifted programs
___ c. Access to differentiated supplies/materials
___ d. Professional training for general education teachers that provide gifted instruction
___ e. An identified individual in the administrative leadership of the school system in charge of the local gifted program
___ f. Assessing academic growth in students
___ g. Mastery of subject area disciplines among teachers of the gifted
___ h. More teachers endorsed/licensed in gifted education
___ i. Adoption of challenging and/or differentiated curriculum
___ j. Professional training related to gifted education for all administrative personnel
___ k. Off-level testing to assess gifted students’ academic growth
___ l. Expanded services to more grade levels
___ m. Matching the services delivered to the individual needs of the child
___ n. Need for a curriculum for gifted learners
___ o. Linkage of gifted education services to regular education initiatives
___ p. Beliefs and values of educators and administrators who are not trained in gifted education
___ q. Other (please specify)________________________________________________

19. List any additional areas of concern or comments related to providing a continuum of services for gifted learners.

Thank you for your time and cooperation.