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Acceleration policies and practices in central Iowa

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Abstract

This study explored acceleration practices throughout the country with a focus on the public and private schools of Area Education Agency (AEA) 11 in Central Iowa. Questions explored included the following: Do the school districts and private schools in AEA 11 allow for the academic acceleration of students in any form? Do they have written or implied unwritten policies for acceleration? What practices, if any, are currently employed by AEA 11 schools? What percentage of students in these schools engage in each type of acceleration? What criteria are used to select students for acceleration? How many acceleration experiences have had positive or negative outcomes?

ACCELERATION POLICIES AND PRACTICES IN CENTRAL IOWA

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Abstract

Academic acceleration policies and practices were examined by reviewing the current literature and surveying educators of gifted and talented students in Central Iowa. Current literature indicated that although acceleration strategies generally prove to be beneficial for appropriate students, there is a general resistance to initiate these strategies. Educators responded to a survey concerning the written academic acceleration policies and types of acceleration practices employed in their schools. From the educators' surveys two important findings emerged: (1) acceleration practices are allowed in 94% of the schools, but only 22% of the schools have a written policy on acceleration; and (2) fewer students than qualify are involved in acceleration strategies at the elementary level, while the opposite is true at the secondary level. The findings were used to make recommendations to schools in Central Iowa and to develop a policy on academic acceleration for the Dallas Center-Grimes Community School District.

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Chapter I

Introduction and Purpose

Rationale

In 1985, Julian Stanley, one of the best known advocates of acceleration for gifted students, began his address to the sixth World Conference on Gifted and Talented in Hamburg, Germany, with the statement, "Educational nonacceleration is an international tragedy" (as cited in Davis & Rimm, 1989, pg. 103). James Borland (1989) considers the issue of acceleration to be one of the most curious phenomena in the field of education, stating that there is no other issue in which there is such a wide difference between what research has shown and what educators believe and practice. Julian Stanley goes so far as to say, "Anyone who can read...[the research literature on acceleration] and still oppose such acceleration, certainly has the courage of his or her own preconvictions" (as cited in Borland, 1989). Although this statement was made almost 18 years ago, not much has changed in the field of education on the topic of acceleration.

In spite of the fact that almost all of the research shows that acceleration is beneficial for gifted students (Benbow,1992; Brody & Benbow, 1987; Borland, 1989; Kulik & Kulik 1992; Lynch, 1994; Rogers 1991; Sayler & Brookshire, 1993; Swiatek,1992; Van Tassel-Baska, 1992), educators tend to stick to the courage of their preconvictions and oppose the use of acceleration as a teaching strategy for gifted and talented students. In 1993, when Saylor and Brookshire completed a national study of eighth grade students to investigate the social, emotional, and behavioral adjustment of

accelerated students, they found that acceleration was rarely used as a teaching strategy in American schools. According to them, only 1.3% of the eighth grade students in the study had been accelerated by either grade skipping or early school entrance. An earlier study by Cox, Daniel, and Boston (1985), found that, although 9% to 16% of schools nationally allow either moderate or radical acceleration, few students in these schools are actually allowed to accelerate (as cited in Sayler & Brookshire, 1993).

Every student has the right to come to school and learn something new every day. To expect gifted students to sit through reviews day after day when they can master new materials in 1-3 exposures is tragic and grossly unfair (Van Tassel-Baska, 1992). In 1992, Robinson referred to the pace of an ordinary high school as "deadly," like a slow motion movie for gifted students. According to Van Tassel-Baska (1992), some of the most talented and gifted students turn off and abandon their intellectual pursuits. Others continue to focus and earn good grades but still suffer from the consequences of a lack of challenge. They do not acquire the habits of thought or study that are needed to fulfill their potential and become the leading scholars and innovative problem solvers of tomorrow. According to Van Tassel-Baska (1992), all students need to appreciate that learning takes effort and involves rigor. She admonishes that, as educators, we do our gifted and talented students a disservice if we require anything less. Other researchers have stated that for some students, providing accelerated learning opportunities is the only way to meet their needs and insure that they develop their talents to the highest possible level and experience a sense of fulfillment throughout their adulthood (Borland 1989; Feldhusen &Van Tassel-Baska, 1989; Rogers, 1991).

Statement of Purpose

It is within the context of the stated rationale that this study explored acceleration practices throughout the country with a focus on the state of acceleration practices in the public and private schools of Area Education Agency (AEA) 11 in Central Iowa. Questions explored included the following: Do the school districts and private schools in AEA 11 allow for the academic acceleration of students in any form? Do they have written or implied unwritten policies for acceleration? What practices, if any, are currently employed by AEA 11 schools? What percentage of students in these schools engage in each type of acceleration? What criteria are used to select students for acceleration? How many acceleration experiences have had positive or negative outcomes?

The answers to these questions were ascertained to determine the status of acceleration in the schools of Central Iowa today. After comparing current acceleration practices in Central Iowa with current practices around the country, recommendations were made to bring the policies and practices in Central Iowa up to the standards that current research suggests. Also, a policy for academic acceleration was developed for the Dallas Center-Grimes Community Schools, a consolidated district in Central Iowa that educates about 1500 students.

Definition of Terms

Even though acceleration has a long history in education and has been thoroughly researched, it is a concept that means different things to different people and often is misunderstood. When most people think of acceleration, grade-

skipping is what comes to mind. To educators in the field of gifted and talented education, however, acceleration is much more than that. It is a form of curricular flexibility in which students are placed in the curriculum based upon competence, rather than age, a concept readily used and accepted in both athletics and the arts (Benbow, Argo, & Glass 1992).

Paulus (1984, p.98) defines acceleration very simply yet clearly as "academic flexibility based on individual ability without regard for age." Van Tassel-Baska (1992) argues that acceleration is no more than allowing students to move through the curriculum at a rate at which they are comfortable and can excel rather than holding them back to conform to a "speed limit" set by the average learner. She continues that acceleration should refer to the rapid rate of a child's cognitive development, not the educational strategy or intervention provided to help that child learn and grow. Tomlinson (1994) adds that the pace that acceleration gives to the gifted learner is not an accelerated pace, but simply the appropriate pace for that learner. The pace only seems accelerated or sped up to the average learner.

The writer drew upon these definitions given by researchers in the field of gifted education to formulate a definition. For the purposes of this paper then, acceleration was defined as an instructional strategy allowing students to move through the curriculum at a pace commensurate with their needs and abilities, regardless of age.

In order to understand thoroughly the concept of acceleration with regard to the gifted and talented learner, one must first understand the difference between enrichment and acceleration. Unfortunately the two concepts are often interpreted to be one and the same. Whereas enrichment implies supplementing the depth, breadth or

intensity of the content or process to meet the needs and abilities of students, acceleration refers to allowing students to move through the regular curriculum at a pace compatible with their abilities. Van Tassel-Baska (1992, p.69) argues that enrichment "has no meaning for the gifted unless it is inextricably linked to good acceleration practices." Davis and Rimm (1985) offer a convenient rule of thumb that gives a clear distinction between acceleration and enrichment. If the practice results in advanced placement or credit, then it should be considered to be a form of acceleration. If it supplements or goes beyond standard grade-level work but does not result in advanced placement or credit, then it should be considered to be enrichment. Therefore, a special foreign language or advanced mathematics class at the elementary or junior high level that does not result in advanced credit or advanced standing would be considered to be enrichment, while an advanced class taken that leads to early graduation or advanced standing in college would be considered to be acceleration. Whereas enrichment could be considered as altering the depth of the curriculum for gifted and talented students, acceleration could be considered as altering the pace of the curriculum.

Acceleration can take many forms. The following types of acceleration are commonly found in today's public and private schools and were investigated in this paper: Early admission to kindergarten, first grade, junior high school, and senior high school, early graduation from high school, moderate grade skipping (one year in school career), radical grade skipping (more than one year in school career), compacted curriculum, acceleration in a single subject, continuously-paced progress or non-graded school, fast-paced courses (2 or more courses in a discipline completed in an

abbreviated time span), Advanced Placement (AP) classes, college correspondence courses, credit by exam, and dual enrollment. For the purposes of this study, continuously-paced progress was considered to be the same as a non-graded school in which students are able to advance through curricula at varied paces, moving ahead when they demonstrate readiness, regardless of age-level. Compacted curriculum was defined as the opportunity for students to periodically test out of known materials using the time saved to pursue advanced topics in that same field or another field of interest.

Limitations

As a first-time researcher, I discovered several limitations of my study along the way. First of all, after receiving the results of my survey, it became clear to me that I should have initiated a small pilot study before sending the survey to the rest of the schools in AEA 11. This would have helped me to ascertain if any parts of the survey needed clarification. Question D in Part II was long and complicated. Although most educators seemed to have no difficulty in supplying the data requested for that question, it appeared that a few misunderstood the instructions and provided either incomplete or inaccurate data. Therefore, the data from some surveys were not included in the results, and the data reported for each question were not from a consistent number of schools.

Another limitation was that, in order to conserve money, surveys were sent to only one TAG coordinator or teacher in each district or private school. Several of the average-sized districts included in the survey had two to three TAG teachers in the district, and a few larger districts had several, from 5 up to 54 in the largest district. In

larger districts that employed a TAG coordinator, it appears that the data that were sent was fairly accurate and complete. In the other districts, however, some teachers did not appear to gather information from their colleagues as requested. Those surveys appeared to be incomplete. If financial considerations had not been a limiting factor, sending surveys to every TAG teacher and coordinator in the surveyed districts and private schools would have gathered more complete and accurate results.

Also, although definitions of terms such as fast-paced classes, continuously-paced curriculum, and compacted curriculum were provided on the instrument, it is not clear that these terms were interpreted the same way by all educators completing the survey. In addition, during the evaluation of the survey, it became clear that the following questions should have been asked: Is credit-by-exam an acceleration practiced allowed and used in your school district? What are the accelerated activities for high ability students that are available outside of the school district or outside of the school year? How many students in your district that began Advanced Placement (AP) classes successfully completed the exam?

In Part I of the survey, educators were asked to list their identification procedures. Although the results were interesting and provided the writer with useful information, the data it provided were not pertinent to the purpose of this study. That section could have been deleted.

This study was also limited in that it did not address the attitudes and perceptions concerning the topic of acceleration from the viewpoint of educators and parents in Central Iowa. Practices will not change or move forward until information is offered, understanding ensues, and attitudes are receptive to change.

Also the reader needs to remember that this survey represents the results of only those schools that voluntarily chose to complete the survey and return the results in a timely manner. It is possible to infer that some of the schools that chose not to return the surveys did not have much to report about acceleration because of the very few acceleration strategies practiced in their schools. Therefore, the results of this survey may be skewed toward expressing a more favorable view of acceleration practices in Central Iowa than actually exists.

Delimitations

Since one of the objectives of this study was to develop an academic acceleration policy for the Dallas Center Grimes Community School District, the survey was designed specifically to survey just the schools of AEA 11 in Central Iowa. It was deemed necessary to access the state of acceleration practices and policies in neighboring school districts with similar constituencies. As a result, the sample was restricted to educators in the school districts and private schools of AEA 11. Due to financial constraints, only one educator in each school district or private school was given a survey to complete for an entire district or school. Another delimitation of the study was that in order to gather accurate up-to-date information, educators were asked to supply specific data for only the 1996-97 academic year.

Readers should keep these limitations and delimitations in mind as they read the rest of this study. Next is a review of the literature on acceleration in the educational arena.

Chapter II

Literature Review

Although acceleration is not often used as an educational strategy for gifted and talented students, it has been a thoroughly researched and debated topic over the past several decades. The following review will briefly examine both the historical context and current research. Current research will include the following topics: A summary of two of the most recent comprehensive reviews; learning theories behind acceleration; IQ distributions in the United States population; the effects on both academic and social development; the effects of early entrance on gifted and talented students; the Iowa Acceleration Scale as an assessment instrument; acceleration and the underachieving gifted; acceleration in the rural United States; special programs designed to accelerate gifted students; current practices in both the United States and Iowa; and the attitudes of educators on this topic.

Historical Context

In this country various methods of acceleration have been used by educators for more than a century to provide challenging opportunities to gifted children (Reis & Westberg, 1994). During the era of the one-room school house, it was standard procedure for students to be placed, promoted and graduated on the basis of performance, not age (Benbow, Argo & Glass,1992). According to Southern & Jones (1992), prior to the Mid-Nineteenth Century, decisions about placement, promotion, and graduation were determined by student performance.

They found that the lock-and-step structure of grade levels based on age did not begin to develop until the early part of the Twentieth Century due to the emerging field of cognitive psychology which developed norms for child development. The authors note, however, that there were also several social and economic factors that influenced the development of grade levels. Larger numbers of children began enrolling in schools due to mandatory attendance policies, child labor and exploitation laws, and the assimilation of large numbers of immigrants. The authors also note that during the Twentieth Century, the use of acceleration has been sporadic; and over the years, some very strong and popular beliefs have developed that children are best educated with peers their same age.

According to Kulik and Kulik (1992), research on acceleration goes back at least 75 years to the year 1916 when an educational researcher named Whipple studied a group of high ability fifth and sixth graders who had been placed in a special class in Urbana, Illinois. In a review of the early history of acceleration, Davis and Rimm (1994) indicate that acceleration strategies had been practiced in many large cities in the United States since the 1870s. At that point, St. Louis initiated a tracking program in which students were able to complete the first eight years of school in less than eight years. The authors also report that in 1884 in Woburn, Massachusetts, the "double tillage plan" was initiated to allow highly capable students to move directly from the first semester of first grade to the second semester of second grade. By 1900 "rapid progress" classes were developed in some cities in which three years of academics were telescoped into two. In 1901, in Worcester, Massachusetts, the first special school for the gifted

opened its doors. Davis and Rimm report that by 1920 two-thirds of the large cities in the U.S. had some special program for the gifted, partially spurred by Lewis Terman's adaptation and Americanization of the Simon-Binet Intelligence Scale, which allowed for easier identification of students who would benefit and succeed in special advanced academic programs.

According to Davis and Rimm (1994), during the 1920s and 1930s, interest in gifted education diminished due to a focus on equity and the turmoil caused by the Great Depression. The focus moved from acceleration to enrichment in the regular classroom, a trend that lasted through the 1940s.

Beginning in the late 1940s, on the rebound from World War II, there was a resurgence of interest in gifted education. Southern and Jones (1992, p. 34) reported that, in 1949, Sidney Pressey defined acceleration as a practice in which a student will "progress through an educational program at rates faster or ages younger than conventional." In 1959 Pressey suggested that, unfortunately, acceleration had become synonymous with grade skipping and nearly every educator had seen at least one bright student "double promoted into an older group who there felt miserably out of place" (as cited in Reis, 1994, p.8). He suggested that better methods to use included early admission to first grade or second grade and the use of a primary pool in which children were together for the first three grades and then were promoted into fourth when they were ready. He also suggested omitting one year at either the junior or senior high level for high-achieving students so that they could progress at a faster rate. A man ahead of his time, Pressey argued that "holding a bright youngster back with his (her) age

group is less favorable to good social adjustment than carefully advancing him (her) into a group more like him (her) in ability of maturity and personality" (as cited in Reis & Westberg, 1994, p.8).

Just a few years earlier, in 1956, Arthur Bestor authored a report entitled "Educational Wasteland," in which he put forth a scathing indictment of educators for failing to meet the needs of able learners (as cited in Tanner & Tanner, 1980). Then, according to Davis and Rimm (1994), during the post Sputnik era, there was a great talent search throughout the United States. The federal government increased funding for an expanded curriculum, especially in the area of mathematics and science in order to catch up with the Soviet Union in the space race. There also was increased funding for enrichment programs and research and an awareness of the needs of the underserved gifted. An emphasis on acceleration began to emerge. It did not last long, however, because the 1960s brought a quest for equality for all with the Civil Rights Movement, Lyndon Johnson's Great Society, and growing criticism of intelligence tests.

In the 1970s there was a renewed interest in gifted education (Davis & Rimm, 1994). According to Borland (1989), the growing dissatisfaction with IQ tests, coupled with the wealth of research on creativity by Guilford and Torrance, brought about a dissatisfaction with "simple IQ-based definitions of giftedness" (p.10).Educators were ripe for a new definition of giftedness. In 1972, a highly influential report called the Marland Report was presented to Congress. It put forth a new, multifaceted definition of giftedness that recognized high performance and ability in many areas beyond the general intellect, and this definition is still the

basis of many gifted and talented programs throughout the country today (Borland, 1989).

By the end of the 1970s, there were numerous special enrichment programs for gifted education and magnet schools with special programs for students with particular aptitudes and talents (Davis & Rimm, 1993). According to Borland (1989), the 1980s saw less emphasis on giftedness, and a focus on talent development began to emerge. Gagne (1985) distinguished between giftedness and talent by defining giftedness to be a competence or ability distinctly above average and defining talent to be a performance distinctly above average.

During our current decade, the United States Department of Education reevaluated the status of gifted and talented education in this country in National Excellence, A Case for Developing America's Talents (1993). Recommendations included providing alternative learning opportunities for students who have mastered the core curriculum and having all students progress through challenging material at their own pace, using flexible grouping based on interests and needs. Clearly, this was a call for the use of acceleration practices in our schools to meet the diversified needs of our gifted learners. A review of current research on this specific strategy follows.

Current Research on Acceleration

As stated earlier, although acceleration has existed as an educational practice for almost a hundred and fifty years in American public schools, it is currently a rarely used educational strategy. Yet, during the past 30 years, there

has been more research completed and reported on this topic than almost any other single educational intervention (Borland, 1989). According to Van Tassel-Baska (1992), thorough reviews on the topic have been completed by Birch & Tuseth (1962), Gallagher (1969), Daurio (1979), Kulik & Kulik (1984 and 1992), Van Tassel-Baska (1986), Benbow (1991), and Rogers (1991). Each of these reviews found that acceleration had a positive impact on students' cognitive development and no negative effects on their psychosocial development. A closer examination of two of the more recent reviews that are frequently cited reveals the following results.

Two comprehensive reviews.

There have been several comprehensive reviews on the effects of acceleration practices on high ability students during the past 15 years. I shall briefly examine two of these: A meta-analysis completed by James A. Kulik and Chen-Lin C. Kulik in 1984 and revisited in 1992, and a best-evidence synthesis completed by Karen Rogers in 1991.

In 1984, Kulik and Kulik's meta-analysis of a variety of grouping strategies included three acceleration approaches: cross-grade grouping, within-class grouping, and accelerated classes. The first two approaches produced a two- to-three month academic gain when compared with students in a mixed ability class. The third approach, in which students were grouped in accelerated and non-accelerated classes, revealed that when accelerants and non-accelerants of equal age and intelligence were compared, the accelerants out-performed the

non-accelerants by at least one-year on standardized achievement tests. When the accelerants were compared to older students already in those grades, only small differences in achievement were found. Overall, their study showed that approaches with the greatest curriculum adjustments had the largest positive effects on learning.

In their 1992 study, Kulik and Kulik revisited their meta-analysis of 1984 in response to the attempts of detracking advocates to eliminate all forms of ability grouping in our schools. The results of this study came from an updated statistical analysis of both their earlier meta-analytical work and a similar meta-analytical study completed by Slavin. Although the pool of studies between this and their earlier met-analysis was similar, it was not identical. Some previously used studies were not included based on critiques made by Slavin, and some of the more current research was included, as well.

The researchers found that programs which involve the greatest amount of curricular adjustment have the largest effects on student learning. They also found that grouping produces higher academic gains for gifted students, but that students in lower ability groups are not harmed academically by grouping and actually make small academic gains under some types of grouping. In the area of the effects of acceleration on social emotional adjustment, there were only a small number of studies to consider. Acceleration appeared to have little or no effect on students' attitudes toward school, participation in school activities, popularity, or adjustment. Acceleration was found to have a strong effect on vocational plans. The effects of grouping on self-esteem approached zero. The results were slightly

positive for low ability students and slightly negative for high ability students. Kulik and Kulik suggested that low ability students may gain slightly in self-esteem when taught with other slower learners, while high ability students may become slightly less satisfied with themselves when taught with their intellectual peers. The authors concluded that "American schools would be harmed by the elimination of programs that tailor instruction to the aptitude, achievement, and interests of groups with special educational needs" (p. 76).

Another comprehensive review, a best-evidence synthesis on grouping practices conducted by Karen Rogers (1991) for the NRC/GT (National Research Center for Gifted and Talented), found similar results. She evaluated the academic, psychological, and social effects of twelve acceleration practices using a meta-analysis of 314 studies on acceleration.

Rogers found that full-time ability grouping produces substantial academic gains and moderate gains in attitude toward the subject, while having little impact on self esteem. She also found that within class grouping and regrouping for specific instruction produce substantial academic gains if the instruction is differentiated, and that cross-grade grouping and cluster grouping both produce substantial academic gains.

Based on these results, Rogers suggested that, at the elementary level, the best acceleration practices include early entrance, grade skipping, non-graded classes, and curriculum compacting. At the junior high level, she suggested grade skipping, grade telescoping, dual enrollment, subject acceleration, and curriculum compacting. At the senior high level, she recommended dual enrollment, subject

acceleration, Advanced Placement classes, mentorships, credit by examination, and early admission to college as the most beneficial practices. She concluded that grouping for acceleration of curriculum such as grade skipping, grade telescoping (rapid progression through courses such as math or foreign language in junior and senior high schools), or subject acceleration produced substantial academic gains.

Learning theory.

Acceleration and other grouping practices fit well with our understanding of how children learn (Van Tassel-Baska, 1992). In 1988, Csikszentmihalyi (as cited in Van Tassel-Baska, 1992) found that students with a high IQ could handle successfully twice as many challenging tasks as students with an average IQ. He also found that high ability is nurtured through exposure to progressively more complex tasks in a structured continuum of learning experiences based upon readiness and mastery. This model for talent development was deemed to be effective for various talent domains. Van Tassel-Baska (1992) reported that there is a relationship between positive achievement motivation and task difficulty at a challenging level. That is, in order for gifted students to be sufficiently motivated to achieve at the levels of capability, they must be challenged with curriculum at that level. According to Van Tassel-Baska (1992), in many cases only acceleration will achieve that goal.

According to Davis and Rimm (1994), students with high ability tend to be independent, self-motivated learners. They need learning tasks that are flexible and unstructured. They prefer a participant rather than a spectator approach. They

prefer to work alone or with true peers, students at their own intellectual level. At times, only acceleration will meet these learning needs.

There are other valid principles of learning that are carefully used with other segments of the school population; yet educators still fail to apply them equally to gifted students (Van Tassel-Baska, 1992). She stated that learning readiness, continuously-paced progress, and challenge levels for learning are used to design curriculum for average learners, slow-learners, and handicapped learners. Even fast learners benefit by having educators design an enriched curriculum for them using these concepts. However, the fastest learners, the highly gifted, rarely have these concepts applied to their curriculum. If they did, and if activities were planned at the appropriate level for them, Van Tassel Baska (1992) suggested that there would be much more acceleration in our schools today.

Distribution of intelligence quotients.

In order to better understand the needs of gifted and talented learners, it is beneficial to put gifted and talented education into the context of special education. According to Borland (1989), gifted and talented education should fall under the umbrella of special education in that its purpose is to provide an appropriate education for students who fall at one of the extremes of the learning curve and "whose exceptionality engenders special-educational needs than are not being met adequately by the regular core curriculum" (p. 33).

According to Feldhusen and Van Tassel-Baska (1989), students who have an IQ at one standard deviation below the mean (85) are considered slow learners

and receive remedial help in math and reading. Students who have an IQ of 70, two standard deviations below the mean, qualify by law for special staffing and educational plans to help them learn. When a student has an IQ that is three standard deviations below the mean, (55-41), they are generally placed in a special class all day long with specialized curricula to meet their needs. When their IQ is 40 or below, four standard deviations below the norm, they are generally placed in a special residential facility full time. Students at the high end of the learning continuum have needs that vary just as much and must receive specialized curricula to thrive and reach their potential (Feldhusen & Van Tassel-Baska, 1989).

Although intelligence quotients are basically a measure of only general intelligence, just one of the six areas of giftedness as defined in the Marland Report, people with high general ability are often found to be gifted and talented in several of the other areas given in the Marland definition (Borland 1989; Davis & Rimm, 1994). According to Sternberg (1996), the most widely accepted view of intelligence at the current time is that of a hierarchy with general ability at the top and successively more specific abilities at lower levels. Feldhusen (1998) reported "precocious youths typically have strong talents in three or four areas" (p.737). Although there are limitations, IQ scores ascertained from valid and reliable standardized tests do offer some guidance in identifying students in need of accelerative curricular adaptations.

Table 1 on page 20 was developed by the writer of this study to summarize the distribution of intelligence quotients that are above the norm for

Table 1

Intelligence Quotient Distributions Among Students in the United States

Standard deviation	IQ range	Percentage in population	Label	Services needed
1 SD Above	115-129	13.59%	Fast Learner	Enrichment
2 SD Above	130-144	2.14%	Moderately Gifted	Resource Room, Special Class & IEP
3 SD Above	145-159	0.13%	Severely Gifted	Full-Day Placement
4 SD Above	160+	.003%	Profoundly Gifted	Residential Facility

people in the United States, giving the percentage of people in the population at each level, a label for each level and services needed at each of the levels. Information was taken from two sources, "The Gifted and Their Individual Differences", a chapter by Feldhusen and Van Tassel-Baska (1989) in Excellence in Educating the Gifted edited by Ken Seeley and Assessment of Children: Fundamental Methods and Practices, a book by Witt, Elliot, Kramer, and Gresham (1994).

According to Gross (1994), students with an IQ of between 160-179 are found at less than one in ten thousand in the population, whereas students with an IQ of 180 or more are found at less than one in one million in the population. Gross believes that these profoundly gifted students vary from moderately gifted

students just as much as the moderately gifted differ from those students with an IQ of 70, at two standard deviations below the mean population.

Academic outcomes.

In their comprehensive reviews on the topic, both Kulik & Kulik (1984) and Rogers (1991) found that gifted students who were allowed to accelerate benefited from significant academic gains. Kulik & Kulik, for example, found that, when compared to nonaccelerated peers of equal age and intellectual ability, accelerated students gained one year academically.

Brody & Benbow (1987) studied the academic achievements, extracurricular activities, goals and aspirations, and social and emotional development of highly gifted students who participated in the Study of Mathematically Precocious Youth (SMPY) over a five-year period. Control groups were made up of equally-as-gifted students who chose not to accelerate. The study found that students who skipped a year of school in their secondary education performed significantly better on their Scholastic Aptitude Tests (SAT) than the control groups, thus demonstrating that fewer years in high school did not restrict their cognitive growth. Average scores on the College Board Achievement Test (ACT) were high for all groups, and there were no significant differences. In the area of special awards and achievements, the accelerated groups did as well or better than the control groups, even though they had less time to earn these awards. More students in the accelerated groups attended highly selective colleges as well.

In a ten-year longitudinal follow-up completed by Swiatek and Benbow (1991), gifted students who engaged in academic acceleration were identified and studied by SMPY and compared across several fields with a group of equally gifted students who did not accelerate. When they were compared at the age of 23, there were very few significant differences found in the academic variables studied. Both groups were highly successful in college and were satisfied with their academic experiences. They also found that both groups were able to compete successfully for admission to colleges with good reputations at both the undergraduate and graduate level. There was no evidence of burnout or gaps in knowledge, two of the primary concerns about acceleration often expressed by educators. Accelerated students did not slow down the pace of their college careers, take time off, or curtail their educational pursuits. Since accelerants performed as well academically as non-accelerants even though they were at least one year younger, it was concluded that acceleration did not lead to gaps in knowledge or poor retention of material.

Swiatek (1993) found that acceleration establishes an interest and strong foundation for future learning. Brody and Benbow (1987) found that the best predictor of college achievement is early and continuous Advanced Placement course-taking, suggesting that challenging work on an ongoing basis is powerful inducement to high achievement later.

In studies of students who enter college early, conducted by Stanley and McGill (1986) and Olszewski-Kubilius (1994), it was shown that the academic performance of these students is impressive. Typically they earn grade point

averages higher than that of the regular freshmen (A- to B+ range) and equal to those of National Merit Scholars who were typical-aged freshmen. The researchers found that when they were compared with regular freshmen, these students were more likely to finish college, finish on time, earn general and departmental honors, make the dean's list, go to graduate school, and complete a concurrent master's degree.

In a study of 25 precocious youth who entered John Hopkins University two-to-five years earlier than usual, Stanley and McGill (1986) found that they made good grades, won honors and graduated on time. Twenty-four of the twenty-five students graduated in four years with a bachelor's degree at the age 19 or younger. Four of these graduates completed a master's degree at the same time. The researchers also found that when they investigated the achievements of the 12 students who had been associated with SMPY, the results were even more impressive. These students tended to start younger, graduate earlier and have a GPA of 3.8-2.89. Most of the 25 students in the study were in graduate school or professional school such as medical school when the paper was published two years after they graduated. Research supporting the academic successes and gains of students who are allowed to accelerate is abundant and without much opposition.

Social outcomes.

When the question of acceleration arises, most concern generally revolves around the psychosocial problems that might occur. Few researchers dispute that

students are not harmed academically when they accelerate. Students who are chosen to accelerate generally have strong academic skills that lend themselves to being measured objectively. However, when it comes to the psychosocial domain, there is more concern about the harmful effects of acceleration and and the fact that there are fewer objective measures to assess social and emotional development.

The psychosocial reasons for hesitation in implementing accelerative programs are more numerous than the academic reasons. According to Swiatek and Benbow (1991), concerns include deficient or delayed psychosocial development that could cause accelerants to have difficulty fitting in with their older classmates; loss of the ability to function in the larger world of average people; jeopardized social acceptance by others since acceleration emphasizes differences; conceited, self-centered behavior on the part of accelerated; and lowered self-esteem of accelerated students.

According to Kulik & Kulik (1984), results of studies of social emotional adjustment of gifted students to acceleration have not been conclusive. Although some studies have shown positive effects for psychosocial development, a few others suggest problems that students have adapting to acceleration. Still others show no consistent effects of acceleration on psychosocial adjustment. According to Southern and Jones (1991), there have been very few studies that have studied the long-term effects on the social-emotional well-being of gifted students that have undergone acceleration. The research they reviewed lacked rigor and appropriate controls. It becomes evident that it is difficult to measure the effects of

acceleration social and emotional adjustment of students. Social and emotional issues are complex and cross many settings such as the school and extra-curricular activities.

According to Southern & Jones (1991), another major problem in the research of the psychosocial domain of accelerated students stems from the fact that, in real educational settings, students who have shown a real need for an educational intervention such as acceleration cannot be randomly assigned to a control group that will not receive the needed treatment. Without such a procedure, however, there is the problem of comparability of groups. Students who choose to accelerate can be quite different in social and family backgrounds from those with equal IQ's who choose not to accelerate.

Carol Tomlinson (1994) suggests that, even though much of the research shows that it is unlikely that acceleration causes social or emotional harm to gifted and talented learners, one should view these studies with caution. Her review of these studies found that they often lacked controls, failed to take into account those who dropped out of acceleration due to problems, overgeneralized the positive findings to a larger population that did not share the same traits, and relied on measures that lacked depth and specificity.

Other factors tend to blur the results of pyschosocial measurements, as well. Davis and Rimm (1985) argue that for some students who have a very high intelligence, social adjustment has been and always will be very difficult. Since these children are most likely to be the ones skipping grades, the social problems which are really related to their high intelligence might be mistakenly attributed to

acceleration. For others, their smaller size and younger physical features can lead people to believe that they are immature or have social or emotional problems, when they are simply just acting their chronological age.

Although some researchers question the research that has been done in this area, others are convinced that acceleration has either a positive or at least no detrimental effect on students (Benbow, 1992; Brody & Benbow, 1986; Feldhusen & Moon,1995). Kulik & Kulik (1984) found that a few studies showed that acceleration had a positive effect on students' vocational plans and that a few others showed that teachers give positive ratings to students who are in accelerated programs. Several studies have found that most gifted students are socially mature, perhaps even surpassing average students in this regard. These studies also found that gifted students are popular with other students and appear to be well adjusted. (Benbow, 1992; Sayler & Brookshire, 1993; Schiever & Maker, 1997).

According to Davis and Rimm (1994), Terman's seventy-five year longitudinal study of over 1500 people identified in the 1920s as being highly gifted (IQ's of 135 or better) showed that those who were able to accelerate during elementary or secondary school had more success later in life than those who were not allowed to accelerate. Some who were not allowed to accelerate developed poor work habits that sometimes wrecked college careers.

In a study of eighth grade students around the nation, Sayler and Brookshire (1992) found that accelerated students felt good about themselves socially and emotionally and had fewer behavior problems than other eighth grade

students. On self ratings they rated themselves as high or almost as high as students who are equally as gifted but did not accelerate and higher than average eighth grade students. The gifted students said that their peers saw them as good students, popular, important, and athletic more than either regular or gifted students did. Accelerated students thought they were more likely than regular students to be seen as good students than their peers, but this did not occur as often as it did for students in the gifted, but not accelerated, group.

One area of concern for researchers is an indication that accelerated students show signs of lowered self-esteem, at least temporarily (Swiatek, 1994; Swiatek & Benbow, 1991). It is important to note, however, that both groups of students, those who accelerated and those who were equally as gifted but did not accelerate, had positive self- esteem with very small differences between them. Swiatek (1994) explains these small differences and declines in self-esteem by using Festinger's (1954) social comparison theory. She contends that when students are accelerated, they are being asked to compete with students more at their level for the first time in their lives. As a result, slight decreases in self-esteem would be normal because they no longer would find themselves at the top of the class. Those students who accelerate and then rejoin their age-mates generally find an increase in self-esteem, while those who do not rejoin their peers often retain a small decrease in self-esteem. Swiatek interprets this as a healthy indicator of greater realism in self concept rather than a dangerous concern. Swiatek and Benbow (1991) and Brody and Benbow (1987) all conclude that empirical

research as it relates to self-esteem does not present clear indications of lowered self-esteem.

Swiatek and Benbow (1991) and Kulik and Kulik (1992) found that most accelerated students are popular with other students, are highly involved in extracurricular activities, and have strong personal resources to draw upon. One study that compared radically accelerated males with equally gifted non accelerants found no significant differences on variables associated with personality, career interests, aspirations, or values (Swiatek, 1993).

Gross (1994), in her study of radically accelerated students, found that, after acceleration, students had a higher level of motivation, enjoyed closer and more productive social relationships, and felt relieved of pressures to underachieve. This study also found that those students with an IQ of 160 or more who had been radically accelerated possessed self-esteem as measured by the Coopersmith Self-Esteem Inventory at one standard deviation above the mean, while those who were equally as intelligent but were not accelerated measured self-esteem at one standard deviation below the mean. Those who had not been accelerated were very much aware of the degree to which they were disliked and rejected by their age-mates. The researcher reported that this was not a false perception because parents and teachers also reported seeing low self-esteem and isolation in highly gifted students who were confined full time to a regular classroom.

Some students who entered college early reported that, for the first time in their lives, they found kindred spirits who understood them. They found the peer

group that they never had in high school, friends that understood their jokes (Noble & Drummond, 1992). Only 18% of the early college entrants who were interviewed by Olszewski-Kubilius (1994) expressed a dissatisfaction with their decision to accelerate. They cited the social isolation they felt and the family stress it caused as the source of this dissatisfaction. Most accelerants were satisfied with the level of acceleration that they had chosen. In the same study it was found that after at least two years of college, 92% of early entrants (16 at the time of the study) said they had a best friend; 68% reported having at least five good friends; and by their junior year, most of their friends were typical-aged college juniors. Female early entrants acquired older friends faster than males. Sayler and Lupowski, in a 1993 study of early college entrants, showed that after three years in college only 9% of the males had adjustment problems and only 8% had behavior problems.

In 1994 Gross stated that children's social and emotional development is more highly correlated to their mental age than chronological age. As a result, gifted students are more likely to form positive and lasting friendships with older students with whom they share common intellectual and psychosocial development. Although more research needs to be done in this area, most studies used in this literature review concluded that acceleration does not have a negative effect on the social and emotional development of highly gifted students. This review now moves to the research on early admission as an acceleration practice.

Early admission.

Early admission to kindergarten, first grade, junior high school, senior high school, and college is a type of acceleration that is seen as being synonymous to grade skipping and has been studied widely. David Elkind published The Hurried Child: Growing Up Too Fast Too Soon (1981) and Miseducation: Preschoolers at Risk (1987) in which he identified the dangers of pushing children to achieve beyond a level or pace that is appropriate for them. Elkind popularized the idea of giving children "the gift of time." He pointed out that not all students move at the pace dictated by birthdates and norms and that educators must learn to recognize the needs of children. According to Elkind, the developmental needs of children should drive the curriculum, not adult desires or administrative convenience (as cited in Borland, 1989).

Borland (1989) saw a parallel danger in "pulling back" children whose intellectual and emotional development is beyond that of a typical child their chronological age. He insisted, "It is also miseducation to insist that a precocious five-year-old who reads fluently and with great pleasure be subjected to a year of kindergarten and the empty charade of reading readiness" (p.186). Borland also noted that when David Elkind was asked by a parent of a gifted child what he should do to prevent boredom, Elkind's reply was to promote the child one grade. Thus, it would appear that even Elkind has seen grade skipping as being beneficial and necessary for some students. Unfortunately, many educators have misinterpreted his works and have applied his basic concerns to all young children (Borland, 1989).

Southern, Jones, and Fiscus (1989) found that educators could cite literature against early entrance into elementary school such as Elkind (1981, 1987), and Uphoff and Gilmore (1985, 1986, 1987), although none could cite literature in favor of accelerating young children. Five decades of reviews have shown little, if any, negative effects of acceleration on young children, yet practitioners still see it as a risky approach.

According to Davis and Rimm (1994), early admission into kindergarten and first grade can be a successful opportunity for some students if educators and parents give proper consideration to the following variables:

- Intellectual precocity (IQ score of 130 or above)
- Hand-eye coordination (at least average perceptual-motor skill)
- Reading readiness
- Social and emotional maturity (observations from preschool environment by a psychologist)
- Good health
- Sex (consideration of maturation rates of males vs. females)
- School of entrance (consideration of average IQ of the school)
- Family values (supportive of academic success and achievements)

Feldhusen (1992) agreed with Davis and Rimm, but added the following to their list of criteria:

- The child should be within 6 months of the approved entering age.
- The child should not be unduly pressured by the parents.
- The receiving teacher should have a positive attitude about the acceleration.

- All cases should be on a trial basis.
- For early admission to first grade, the child should show achievement levels at or above the second semester first grade level for reading comprehension and mathematical reasoning

Early admission to junior or senior high school can be quite beneficial for some properly selected students. One student interviewed by Tomlinson (1994) grade-skipped once in elementary school, once in junior high school and once in senior high school, and then entered college at 14. She commented that it was the first time a school could show her how to get better at something and that she never felt out of place in college as she did every day in public school.

According to Olszewski-Kubilius (1994), students who skip grades at the lower levels find the need to enter college early. For many, the challenging work is a welcomed relief. The authors caution, however that such acceleration is not for everyone. Early entrance to college can mean forgoing athletic eligibility in high school and college. Gifted students tend not to play in sports; but, for the athlete who is gifted intellectually as well, acceleration may not be a good choice. Early entrants need early career counseling in both high school and college and possibly in junior high school to plan their high school curriculum. The authors found that early college entrants have the most success in programs that offer special support programs for young college students. Often these programs offer special dormitories, specially trained counselors, and special events to help these students assimilate into college life.

In 1992, Sayler and Lupkowski reported that 15% of colleges actively recruit early entrants and that 87% of colleges allow early entrants full time prior to high school graduation. However, entrance requirements are different and information is often difficult to find.

Sayler and Kupkowski (1992) suggest the following advantages for students choosing to enter college early:

- More challenging coursework
- Deeper abstraction, conceptualization, and questioning in classes
- Opp
- ortunity to be more independent in studies
- Freedom of movement for a large portion of the day
- Increased knowledge base at an earlier age
- Development of problem solving skills using increased knowledge base
- Better network to assimilate new knowledge
- Gain of time to explore hybrid and multiple careers
- Gain of time to study in foreign countries

Early entrance into elementary school, junior high school, or senior high school is not for most students. However, the reviewed literature clearly shows that, as an acceleration strategy, this practice is relevant and appropriate for some carefully chosen, highly gifted, and motivated students.

Iowa Acceleration Scale.

Identification of students that would be likely candidates for acceleration is sometimes a difficult proposition. In response to concerns expressed by both educators and parents that a decision to accelerate may adversely affect a child, an assessment tool, the Iowa Acceleration Scale, was developed in 1993 by Susan Assouline, Nicholas Colangelo, and Anne Lupkowski at the Connie Belin and Jacqueline N. Blank International Center for Gifted Education and Talent Development (Belin-Blank Center) at The University of Iowa. The purpose of the scale was to provide guidelines for educators and parents considering whole-grade acceleration, early entrance into school, or early graduation from school for a particular student (Assouline, 1997).

In order to implement the scale for a particular student, the authors suggested forming a committee consisting of the current classroom teacher, possible receiving classroom teacher, the TAG teacher, guidance counselor, building principal, and parents to gather specific data about the child. This committee would be asked to come to a consensus and respond to questions in the following areas about the student: (a) academic ability and achievement, such as ITBS scores, (b) school information, such as teacher attitude about acceleration, (c) interpersonal skills, such as the student's participation in extra-curricular activities, and (d) attitude and support, including the student's attitude about acceleration and the level of parental support (Assouline, 1997).

Once the scale was completed, schools would be asked to return it, along with anecdotal information, to the Belin & Blank Center for evaluation. When the evaluation has been assessed and returned to the school, the committee would reconvene to discuss the results and to interview the student. If the decision was to accelerate, it would be the committee's task to determine how best to implement the acceleration and how the student could be transitioned back, if necessary (Assouline, 1997).

This scale is currently being revised and will soon be available in an updated form along with a manual so that educators can use the scale and complete the evaluation on their own. IAS is available from Dr. Susan Assouline at the Belin-Blank Center at the University of Iowa (see Appendix A).

Underachievement and acceleration.

" The underachieving gifted child represents both society's greatest loss and its greatest potential" (Davis & Rimm, 1994, page 281). In A Nation at Risk, published in 1983, the National Commission in Excellence in Education reported that over half of our gifted students do not perform up to their tested abilities (as cited in Reis, 1994). In their research on high school dropouts, Davis & Rimm (1994) found that 10-20% of these students who do not graduate from high school could be considered gifted. Underachievement also is found at the college level, where Davis and Rimm report that 40% of the top 5% of high school graduates do not graduate from college. According to Feldhusen and Moon (1992), only 5% of American seventeen-year-olds can synthesize specialized reading material. Only

6% can solve math problems requiring more than one step to solve, and only 7% can draw conclusions from detailed scientific material. Clearly some of our brightest students are underachievers.

Many of our rural gifted and talented students are underachievers as well. Studies have shown that these students are often underserved and are, therefore, at great risk for underachievement (Benbow, Argo, & Glass, 1992, Jones & Southern, 1992).

Rimm and Lovance (1992b) have reported that for many young people the beginnings of underachievement can be found in elementary school. There appears to be a direct relationship between content in the elementary school that is too easy and underachievement in the middle or high school. For some students underachievement appears to be periodic and occurs during a particularly bad school year. However, for most, these periods of underachievement will develop into a chronic pattern.

Rimm and Lovance (1992b) report that underachieving students often lack a sense of locus of control; that is, they do not understand the relationship between their efforts and outcomes. They have not learned to persevere sufficiently enough to discover that it makes a difference in results. Rimm and Lovance find that these students also tend to be highly competitive individuals that have not learned to cope with both victory and defeat. They tend to avoid activities in which they perceive they cannot win. In school they avoid taking the risk of finding themselves not as intelligent as others perceive them to be.

According to Rimm and Lovance (1992b), these underachieving students need environments in which they are not the smartest all the time. They need curricula that are challenging in order to have the opportunity to develop locus of control. The authors suggest that students can not learn to persevere if their work is almost always too easy for them.

In another study, Rimm and Lovance (1992a) reported that acceleration can have a positive impact on underachieving gifted and talented students. They found that acceleration in the forms of early entrance to kindergarten, grade skipping, and subject skipping can prevent and reverse some forms of underachievement. Acceleration was found to be very effective as an incentive to students whose underachievement was caused or intensified by an unchallenging curriculum.

Rimm and Lovance (1992a) are careful to note, however, that acceleration is not for all underachieving gifted students. Children with high intelligence but major skill deficits or behavior problems would not benefit from acceleration and neither would students who would not want to work hard or learn. If the causes of underachievement come from the home setting rather than the school curriculum, Rimm and Lovance would not recommend acceleration.

Acceleration will not reverse the pattern of failure for all underachieving gifted and talented students. However, this review of the literature indicates that for some, it could open a door to a challenging, exciting adventure in learning.

Acceleration for rural areas.

Gifted and talented students in rural areas are often underserved. (Benbow, Argo, & Glass, 1992, Jones & Southern,1993). According to Benbow, Argo, and Glass (1992), schools in these rural districts offer fewer programs for the gifted and talented; and, where programs do exist, options are limited. One of the main difficulties is that rural schools have a smaller population and will, therefore, have a smaller gifted and talented population. In Iowa, for example, 76% of the school districts have a population of less than 1000, translating into about 75 students per grade level. One would expect to find only 2-3 highly gifted students per grade level and possibly none in some grade levels.

According to Jones & Southern (1992), there are other factors that have contributed to gifted students being underserved in rural districts. Rural communities tend to be more conservative, and there is more reluctance to stray from the status quo. With the relative novelty of gifted programs in rural areas, lack of sufficient numbers of student enrollment to justify grouping or pull-out programs, staff that is inexperienced and untrained in gifted and talented education, limited financial resources, and scarce cultural opportunities, it is easy to see how gifted and talented students are underserved in the rural communities

Jones and Southern (1992) suggest that rural school districts make a concerted effort to use new technology to bring resources to gifted and talented students. Classes taught over cable networks, programmed classes taught by computer, projects using the Internet as a resource, communication with other gifted and talented students through the Internet or e-mail are all viable options to

provide gifted students with an accelerated curriculum and the opportunity to share with other gifted and talented students. Now is also the time for school districts to take advantage of federal grants and state money that is available for school districts use to upgrade the technology in their schools. The authors also suggest that rural school districts collaborate in providing resources, services, and staff and offer innovative ways for teachers to gain training in gifted and talented education.

Benbow, Argo, and Glass (1992) indicate that "curricular flexibility is a powerful technique for meeting the needs of gifted student, and perhaps the only alternative for students growing up in rural America" (p. 16). Acceleration in the form of grade skipping, early entrance, credit by exam, single-subject advancement, or correspondence courses are all viable, inexpensive, easy- to - implement strategies for the rural school district. Other options offered by these authors include programs offered by universities in either the summer or during the academic year. These might include residential programs offered during the summer, all-year residential programs, weekend classes, and career days. Gifted and talented students from rural areas are at greater risk of not being able to live up to their potential. The use of technology and university resources should be widely enlisted to offer them the accelerated curriculum they need.

Special programs.

There are several special programs that have evolved to promote acceleration practices for highly gifted and talented students. According to Davis

and Rimm (1994) and Brody and Benbow (1987), one of these exists at Iowa State University, where the Study of Mathematically Precocious Youth (SMPY) has been operating for more than two decades. SMPY identifies mathematically gifted seventh and eighth graders through the Scholastic Aptitude Test (SAT) and the College Board Achievement Test (ACT), tests designed for high school juniors. Students are given the opportunity to accelerate in mathematics through weekend and summer classes and make remarkable progress. CY-TAG was instituted at Iowa State University in 1987 and offers eight accelerated classes drawn on college freshman curriculum in the areas of writing, mathematics, and biotechnology for junior and senior high students. The Governor's Summer Institute for Gifted and Talented at Iowa State University also offers college-level classes for students who need the challenge of accelerated work. This program has been very successful, drawing a large number of these students into Iowa State University, many with enough college credits to enter as sophomores (Brody & Benbow, 1987).

The parent program called CTY (Center for Talented Youth Academic Programs) has operated at John Hopkins University since 1980, under the leadership of Julian Stanley (Davis & Rimm, 1994). This program also conducts a nation-wide talent search of gifted seventh and eighth graders. Students have the opportunity to master course work at a level not usually available to junior high and high school students and can also to complete a year's worth of work in three weeks. Other opportunities include acceleration in either subject or grade and participation in special seminars and symposia (Barnett & Durden, 1993). Many, if

not most, of the students that have participated in CTY have gone on to be very successful in college and careers (Barnett & Durden 1993; Stanley & McGill, 1986).

According to Ravaglia, Suppes, Stillinger, and Alper (1995), a program at Stanford University called EPGY (Education Program for Gifted Youth) provides year-round accelerated instruction in mathematics and physics to gifted students using a computer-based curriculum. Because the program is computer-based, students may participate from a variety of settings, including urban schools, rural schools, and homes. The programs are intended to stand alone; they are not simply to supplement the curriculum. They include lectures and on-line exercises designed to accurately gauge the students' understanding of the material presented. Students have direct contact with instructors via electronic mail and the telephone. Advanced Placement calculus and physics have been successfully taught to gifted middle school students giving them the challenge they need and the opportunity to master skills needed to apply to higher sciences. The researchers found that currently middle schools mathematics is becoming less "mathematical" so that it is more accessible to more students. They state, however, that for those who are more capable and interested in higher levels of mathematics, this "more accessible" mathematics is simply another example of a "dumbed down" curriculum. They feel that capable students should be allowed to progress at a quick pace through a rigorous mathematics curriculum, learning calculus when they are ready. These authors suggest that it makes sense for all students who will take physics to learn calculus before taking physics so that they can apply the mathematics learned.

Currently, it is most common for students to take calculus and physics concurrently.

Cox, Thomas, Keller, Hibbs, & Russell (1990) reported on the Pyramid Project as another model of accelerated learning developed in the past decade. The project grew out of the Richardson Study of 1985 in which educators in gifted education from around the country gathered to discuss the state of gifted education and to make recommendations to improve the level of services provided for the gifted. The Pyramid Project was in existence from 1985-1989 in the schools of Fort Worth, Texas. Perhaps the most important commitment that the participating school districts made was to agree to implement flexible pacing at both the elementary and secondary levels. Researchers following the project noted that the districts made major strides in its efforts to provide challenging programming for its able learners. Advanced Placement classes were added every year; special honors classes in which students studied curriculum generally associated with higher grade levels were provided; and dual credit enrollment in college classes was facilitated.

Robinson and Noble (1992) found that there are several programs across the United States that encourage early college entrance for highly accelerated students that meet a strict criteria. These programs provide both a social match in the form of a peer group and an educational match in the form of college-level coursework. Mary Baldwin College in Staunton, Virginia, enrolls gifted girls one to four years early in a small, liberal arts college with other girls that are also young and gifted. The Texas Academy of Mathematics and Science of North

Texas in the campus of the University of North Texas enrolls students during their junior year of high school. The Early Entrance Program at California State University in Los Angeles is similar to the University of Washington's Transition School and Early Entrance Program. Both of these programs allow junior high age students to enter college without going to high school. The first year students enter a transition school in which they progress at their own rate. They are provided with a warm, peer setting, a psychologist, and facilities that act as a home base. During the second year they enroll full time in college classes.

These programs, and others like them, have proven to be successful ways to provide an appropriately challenging education for students of high ability. Robinson and Noble (1992) remind us that "the conventional ways of doing things may not be the only ways and that calendar age is not the only criterion to consider in creating an optimal educational and social match for a student who is ill-served by the ordinary high school curriculum" (p.23).

Current policies and practices in acceleration.

In 1994, Reis and Westberg investigated policies in 105 school districts around the nation that collaborate with the National Research Center on Gifted and Talented (NRC/GT) to determine the extent of use of content acceleration and grade skipping in secondary schools. They found that only 15% of the school districts that responded had a formal policy about grade skipping and that 57% indicated they had an informal, unwritten policy that prohibited students from grade skipping. Only .02% were allowed to grade skip during the 1993-94 school

year, a figure that is smaller than recent research has indicated. Yet this does corroborate the findings of Sayler and Brookshire (1993) in which 1.3 % of a national sample of eighth graders were found to have accelerated at some point during their school career.

In regard to content acceleration, only 27% of the school districts that responded to the Reis and Westberg study had established policies that enabled students to accelerate through content at the secondary level, and only 36% had policies for the elementary and secondary levels. According to the researchers, many districts that did have written policies felt that they were vague and unclear. The results of this study showed clearly that acceleration procedures depend widely on unwritten informal policies that are often developed around the opinion and personal biases of administrators and teachers (Reis & Westberg, 1994).

In The Richardson Study vs. Iowa, Frank Belcastro (1995) compared practices in gifted education in Iowa to those of a national survey called "The Richardson Study." In relation to acceleration, he found the following results:

- With regard to early entrance at the elementary level, only 20% of Iowa's school districts had a policy that allowed it compared to 78% nationally.
- At the junior high level, 40% had an early entrance policy, compared to 15% at the national level.
- At the senior high level, 53% had an early entrance policy, compared to 16% at the national level.
- Where districts had a continuous-progress policy, significantly fewer Iowa schools, 62% vs. 80%, nationally, allowed it at the elementary level.
- Where districts had a continuous-progress policy, significantly more Iowa schools (47% vs. 27%) had less than 5% of its students functioning above grade level in one or more content areas.

- Where districts had a continuous-progress policy, significantly fewer (5% vs. 28%) had more than 20% of its students functioning above grade level in one or more content areas.

- In part-time special classes for the gifted, significantly fewer (28% vs. 42%) studied math, (25% vs. 37%) studied science, (29% vs. 51%) studied English/language arts, and (22% vs. 31%) studied social studies.

- In full-time classes for gifted students, significantly fewer Iowa classes (33% vs. 53%) studied science, (50% vs. 70%) studied English/language arts, (26% vs. 43%) studied social studies.

- Districts that had a policy for early entrance, used achievement tests (87% vs. 28%) and teacher recommendation (80% vs. 36%) as a basis to determine eligibility.

- Only 26% of schools in Iowa vs. 58.1% in the nation offered AP classes for American history.

As a result of his findings, Belcastro (1995) made the following recommendations with regard to acceleration:

- Make all levels from kindergarten through senior high school available for early entrance for gifted students.

- Instead of involving all of the class in a regular classroom in enrichment activities, separate these activities for gifted learners so they can truly be at their level. Better yet, offer full-time special classes for the gifted.

- Allot more than three hours per week for enrichment, or better yet, provide full-time special classes.

- Use individualized instruction as an enrichment strategy where enrichment activities are used for gifted students in the regular classroom or provide full-time special classes instead.

- Meet with gifted students five days per week in a pull-out program for enrichment, or offer full-time special classes.

- If part-time or full-time special classes are offered for gifted students, study math, science, language arts, and social studies as a substantial part of the curriculum.
- If full-time special classes are offered for the gifted, provide differentiated materials that challenge them at their ability-level.
- Use a continuous-progress policy in the elementary grades.
- Use language arts as an area in which students can work at their own pace in a continuous progress programs.
- Offer American history as an advanced placement course in the College Board Advanced Placement program

Attitudes of educators.

Empirical research and theoretical rationale, as delineated in the reviewed literature, point to the fact that acceleration is a very successful strategy for delivering curriculum to gifted students. One would expect that the educational community would wholeheartedly embrace the concept and use it wisely with properly selected students. Unfortunately, that has not been the case (Lynch, 1994; Reis & Westberg, 1994; Van Tassel-Baska, 1992). A survey of practitioners attitudes conducted by Southern and Jones in 1992 demonstrated that even the majority of gifted program coordinators themselves are not in favor of acceleration.

According to Tomlinson (1994), middle school educators have been particularly silent on the subject of acceleration. She states that educators of middle school students envision adolescents as unable to think and learn in advanced and complex levels. Their belief is that students at this age are trying to

fit in with their peers and should not be singled out. Tomlinson feels that this concept is rooted deeply in the concept of equity. Educators want to treat all students the same, removing any stratification. The author believes that what these educators fail to see is that adolescents, as a group, differ more among themselves than any other group in terms of intellectual, social, emotional, and physical development. The disparity is so great for some that Tomlinson believes only accelerated learning experiences will meet their needs, truly providing equality for all.

According to Southern, Jones, and Fiscus (1989), when educators are surveyed on the topic of acceleration, they express fear that students will lose their academic advantage, lack the physical social, and emotional maturity to handle the stress of acceleration, display arrogant behavior toward others, and experience difficulties in social and emotional development due to their young age and mediocre achievement in comparison to their older classmates. According to the researchers, educators express fear that acceleration could bring harm to the social and emotional development of accelerated students. Teachers understand academic achievement as being apparent and measurable, whereas they perceive social/emotional development as being less evident and difficult to measure. The researchers found that teachers see this harm as being subtle, persuasive, and difficult for them to fix.

From their study of educators' attitudes toward acceleration, Southern, Jones, & Fiscus (1989) concluded that in the area of school-readiness, educators are very reluctant to encourage students to begin school early. They also

discovered that educators expect that students who are young compared to their classmates are more likely to have lower levels of academic achievement, to have more difficulties in social and emotional development, and to be at greater risk for retention. According to these researchers, many educators are opposed to early entrance regardless of the ability of the student. In many states there have been efforts to mandate a policy that favors moving the school age entry level back from five to five years and six months, regardless of age.

Southern, Jones, & Ficus, (1989) reviewed the school-readiness studies on which many educators base their beliefs and found many flaws that lead them to believe that the conclusions of these studies are false. There were several methodological problems such as the fact that the sample selection compared children who were young for their grade with their older classmates. The young-in-grade students were chosen by age only, not academic ability. In two of the studies that are frequently cited, children with high intelligence scores were intentionally omitted. In some of the studies, economic conditions affected the sample in that younger students often came from families with a lower socio-economic status. These families needed their children to be in school so that they could work. These authors also found that none of the studies used controls or took into account teachers personal biases about younger children.

On a more positive note, Southern, Jones, and Ficus (1989) found that when educators had a personal experience with acceleration such as a family member or student who had been accelerated, they tended to have a more positive view of the strategy. These researchers believe that acceleration is clearly an

acceptable and necessary strategy for the education of our gifted children. The more important issue at this time is acceptability.

Summary

How can educators in gifted education convince administrators and teachers in the regular classroom of the benefits and needs of acceleration? One way is by convincing them of the advantages of employing such strategies in their schools and classrooms. According to Van Tassel-Baska (1992), accelerated students have improved motivation, confidence, and scholarship. They are prevented from developing lazy, mental habits and they can complete their professional training at a younger age reducing the cost of their education.

Kulik and Kulik (1984, 1992) and Rogers (1991) remind fellow educators that their thorough meta-analytical studies gave clear and convincing evidence that acceleration practices provide significant academic gains for high ability students at no cost to middle or low ability students. They point out that their studies did not find any evidence that students' social or emotional development would be harmed in any way.

Davis and Rimm (1994) and Van Tassel-Baska (1992) prompt educators to be cognizant of how gifted students learn. They would remind us that there is a clear relationship between positive achievement motivation and task difficulty and that these students need less structured, flexible, open ended learning environments that are student- centered.

Feldhusen (1992) and Davis and Rimm (1994) suggest that educators, parents and administrators become more knowledgeable in the areas of grade skipping and early entrance into elementary school to discover that for some high ability students these are very successful and much needed options to enable them to develop to their fullest potential. Feldhusen and Moon(1995) add to the list of advantages of acceleration the fact that the strategy gives gifted students exposure to a new peer group that matches their abilities more appropriately, increases time for a career at the end of schooling, and can renew a student's interest in school.

In the area of underachievement, Rimm and Lovance (1992a, 1992b) and Reis and Westberg (1994) caution fellow educators to scrutinize carefully their underachieving students for signs of giftedness. Rimm and Lovance (1992a, 1992b) suggest that grade skipping might reverse underachieving behaviors.

Benbow (1991) and Southern & Jones (1992) suggest to their colleagues that acceleration is an easy, inexpensive way to meet the needs of gifted students in rural areas. They suggest that districts do not need to hire more staff or add more classrooms. They simply move children to where the curriculum fits, regardless of age and grade level.

Belcastro (1995) reminds fellow educators in Iowa, that although our gifted programs are strong in some areas, there are many issues, especially in the area of acceleration, that need improvement in the schools in the State of Iowa. He suggests that educators in Iowa work to bring the standards up to those found nationally.

Southern and Jones (1991) argue that acceleration is a tool that classroom teachers must employ due to its economy of use, its inevitability, and sheer honesty. In many situations the only reasonable economic solution to a student's advancing through the curriculum is one of acceleration to another grade where the resources and expertise are already available. It is nearly impossible to design a strategy that challenges all students and avoids acceleration in all of its forms, so it is inevitable and a matter of honesty that all school districts will eventually need to face the topic and develop policies in favor of the practice.

The topic of acceleration has been heavily researched. The studies summarized in this review showed that, although educators are reluctant to employ acceleration practices in their classrooms, the advantages of using acceleration as a strategy to educate gifted children are many and convincing.

Chapter III

Methodology

After briefly examining the current literature on the topic of acceleration throughout the United States, a survey was developed to gather data to assess the state of acceleration practices in the public and private schools of Area Education Agency (AEA) 11 in Central Iowa. The results of this survey were used to develop a policy for academic acceleration for the Dallas Center-Grimes Community Schools, a consolidated district that educates about 1500 students in Central Iowa.

Sample

Surveys were designed to be mailed to either the Talented and Gifted (TAG) coordinator or one of the TAG teachers in each of the 55 school districts and 23 private schools in AEA 11, a state-funded agency that serves the schools of Central Iowa. Names were selected from the listings in the 1997-98 edition of the Directory of Heartland AEA Gifted and Talented Personnel. If TAG coordinators were listed for districts, then the survey was sent to them. If no TAG coordinator was indicated, then a survey was sent to one of the TAG teachers listed in the directory.

In districts where there was no coordinator and more than one TAG teacher, only one subject was selected to receive the survey due to financial constraints. If the investigator was familiar with any of the TAG teachers listed, the writer chose that teacher to be the representative for the school in hopes of getting a better return on surveys. In one case where the teacher was familiar with two TAG teachers from the same district, the investigator chose the teacher that would most likely respond in a

timely manner. If the investigator was not familiar with any of the TAG teachers, then the one that served the most grade levels was selected. If the TAG teachers served an equal number of grades, then one was chosen randomly.

Although the subjects and their respective school districts and schools were known to the investigator, results were tabulated and presented anonymously. It was decided that responses would not be returned anonymously, however, so that the writer could send results of the surveys to the participants and that the lines of communication would be open if clarifications were needed. The decision also allowed for future collaboration between the investigator and participants.

This study used a non-experimental research design with a finite sample. The purpose was to survey schools in a specific geographic region, namely those neighboring the Dallas Center-Grimes School District in Central Iowa. As a result, the sample was limited to a specific total of 78, the sum of the 55 school districts and 23 private schools served by AEA 11. The sample was limited and nonrandom.

Instrumentation

The survey developed for this study was a one-page, two-sided word-processed document (see Appendix B). It included two sections: (a) Part I, a smaller section that gathered general information about the school district or private school, and (b) Part II, a larger section that gathered information about specific acceleration policies and practices in these schools. The investigator reviewed two other surveys that dealt with assessing acceleration practices in order to design the format of this survey. The first survey was developed by Frank Belcastro for his 1995 study entitled, Richardson

Study: U.S. vs. Iowa, in which Belcastro gathered information about gifted programs in the State of Iowa and compared it to the results of a national survey called The Richardson Study completed in 1985. The second survey was developed by Sally Reis and Karen Westberg for their 1994 study entitled, An Examination of School District Policies. In this study the authors gathered information about acceleration practices and policies in secondary schools throughout the United States.

In Part I responders to the survey were asked to supply general information about their school district which included the name of the school district, name and title of the person completing the survey, the total school and TAG populations at the elementary, junior high school, and senior high school levels, and procedures used to identify gifted and talented students for special programming.

In Part II of the survey, responders were asked to respond to questions about particular acceleration policies and practices in their districts or schools. In a fill-in-the-blank format they were asked to respond about the acceptance of acceleration in their district, the presence or absence of written policies about acceleration, and the frequency with which 13 specific acceleration practices were used during the 1996-97 school year, broken down into elementary, junior high, and senior high grade levels. The following acceleration practices were included: (a) early admission into kindergarten, (b) early admission to first grade, (c) early admission to middle school of junior high, (d) early admission to high school, (e) early graduation from high school, (f) moderate grade skipping, (g) radical grade skipping, (h) compacted curriculum, (i) single-subject acceleration, (j) continuously-paced progress, (k) fast-paced courses, (l) Advanced Placement courses, (m) dual enrollment, and (n) other.

If the practice was one that had never been used, participants were asked to respond with N/A. If the practice was one that had been used in the past or one that was allowed by school policy but had not been initiated for any students during the 1996-97 academic year, participants were asked to respond with a zero.

In addition, participants were asked to answer Questions E, F, and G in which they were given the opportunity to list criteria used to determine when acceleration practices would be employed, any experiences with acceleration that did not have a positive outcome, and other notable experiences with acceleration that occurred other than during the 1996-97 academic year. Districts with a written policy were asked to mail a copy of the policy with their survey.

The survey concluded by thanking the participants for their time and assistance and requesting that they return the survey to the researcher in a self-addressed, stamped envelope by May 15, 1998. Participants also were given the opportunity to indicate if they would like a copy of the findings sent to them at the conclusion of the study.

Since the survey requested information from human subjects, before mailing it out to schools, the researcher completed an application to the University of Northern Iowa Institutional Review Board requesting permission to undertake such a project. On April 29, 1998, permission was granted to proceed with the project with no further review necessary. Since it was specified in the application that educators and school districts would remain anonymous, it was determined that there would be no references to specific school districts or schools in the discussion of the results.

The survey was prefaced by a cover letter that identified the researcher as a candidate for a master's degree in gifted and talented education at the University of

Northern Iowa under the direction of Dr. William Waack (see Appendix C). The cover letter also informed the recipients of the writer's two-fold purpose in pursuing this project: (a) to formulate an academic acceleration policy for the Dallas Center Grimes School Community School District as instructed by the administration, and (b) to meet the requirements for completing a master's degree in gifted and talented education. The letter closed by giving the recipients of the survey ways to contact the researcher and by thanking them for their cooperation and assistance.

Procedures

On April 30, 1998, seventy-eight surveys were mailed, one each to the 55 school districts and 23 private schools served by AEA 11. Surveys were addressed to either the TAG coordinator or one selected TAG teacher in the district or school. Participants were asked to complete the survey for their respective district or school, gathering information from other teachers and sources, if needed. They were asked to return the survey to the investigator in a self-addressed, stamped envelope by May 15, 1998. Participants were given the investigator's home phone number, e-mail address, and the fax number at the Dallas Center-Grimes Elementary School in order to facilitate communication and clarify any questions that might arise.

Once the surveys were returned, data from Part I were transferred to a chart in list form. Population was tabulated to determine the total population of the district or school, in the case of the private schools. Types of identification procedures were also tabulated for frequency.

Frequency of response was used to tabulate data from Part II, Questions A-D, concerning the acceptance of acceleration in each school or district, the existence of a written acceleration policy in each school or district, the implication of an unwritten policy in each school or district, and the frequency that students in each school or district are involved in the 13 acceleration strategies listed on the survey. The data were transferred to a chart where the investigator tabulated and recorded the percentage of school districts and schools that used each practice during the 1996-97 academic year, the percentage of schools and districts that indicated that each was an allowed practice, even if it was not used in their school during the past year, and the percentage of students that participated in the practice during the 1996-97 academic year.

In order to analyze Questions E-G in Part II, which included the criteria used to determine which acceleration practices to employ, experiences that did not have a positive outcome, and other notable experiences listed from the survey, the investigator used a technique called content analysis. The investigator reviewed the responses, looked for similarities and differences, and drew conclusions from the analysis. This technique also was used to analyze the written policies submitted.

Chapter IV

Results

The following is a synopsis of the responses made by the educators in Central Iowa about the acceleration policies and practices in their respective schools and school districts. The results are arranged in order according to the questions posed in the survey.

Responses to Part I

Thirty-five surveys were completed and mailed back from 29 public school districts and 6 private schools. One private school returned the survey but did not complete it, stating that there is no TAG program in the school and no acceleration practices are used. Responses from these 36 schools represented a 50% return rate. The data collected from Part I of the survey indicated that these schools represent information about 75,396 students: 36,906 from the elementary level; 17,199 from the middle school or junior high level; and 21,291 from the senior high school level.

Responses: Part II, Questions A-C

In Part II of the survey questions, the first three questions, A-C, required a simple yes-or-no answer. Question A asked if the district allowed acceleration in some form; Question B asked if the district had a written policy for acceleration; and Question C asked if the district had an implied unwritten policy. When TAG coordinators and teachers were asked whether their district allowed acceleration in

some form, 34 (94%) responded in the affirmative.When asked about the existence of a formal written policy of acceleration, only 8 (22%) responded in the affirmative, while 24 (69%) stated they had an informal, unwritten policy.

Districts with written policies.

In response to Question B, 7 of the 8 districts with a written policy submitted a copy of that current policy. These districts were labeled A, B, C, D, E, F, and G in order to simplify explanation of the results and to retain their anonymity. An analysis of these seven policies showed many similarities and a few notable differences.

Similarities in written policies.

All seven of the districts that submitted policies allowed the referral system to be initiated by either teachers or parents. All districts assembled a placement committee to gather and assess information about acceleration. In each district, committee members included the student's current classroom teacher, the TAG teacher or coordinator, the building principal, the guidance counselor, and parents. Some districts encouraged a few other teachers to participate as well. All districts required that both parents and students agree to acceleration before implementing the practice. Also, all districts provided for movement out of acceleration and back to the regular class at no penalty to the student.

Each of the seven districts that supplied a copy of their acceleration plans displayed a proactive, positive approach toward acceleration in general. Although five of the acceleration plans dealt with acceleration in a single subject area and grade

skipping exclusively, their responses to the other questions on the survey indicated that other forms of acceleration such as Advanced Placement classes, dual-enrollment, and early graduation were in place and used.

Differences in written policies.

There were a few notable differences between the policies of these schools. Five of the seven districts with written policies (A, D, E, F, and G) provided acceleration only in the form of subject acceleration or grade skipping. District C simply listed acceleration as one of its services under specific academic programs for gifted and talented students, while District B included its acceleration policies within its allowable growth plan. In District B, services for TAG students were described in levels. Level III, which was entitled "Modification of the Regular Curriculum," listed services to include compaction, acceleration, and/or enrichment. particularly in the instruments used for evaluating students

District B's policy for acceleration included an option for post-secondary education for qualified students beginning in the ninth grade and the option to test out of selected classes for credit. District C's policy called for meeting individual needs, however that needed to be done. These were the only two districts that expressed an acceleration policy that included more than grade skipping and single-subject acceleration.

In the area of assessment instruments, there were some notable differences. Only two districts, A and D, indicated the use of an intelligence test to evaluate students, and both of them indicated using the Wechsler Intelligence Scale for Children

(WISC-R). Three of the districts (B,C, and G) did not specify assessment instruments in their policies.

Only two districts, E and F, listed the Iowa Acceleration Scale as an assessment tool used to select students for acceleration, although this instrument is specifically designed to evaluate students for grade-skipping, early entrance into elementary school, or early graduation and has been available since 1993 from the Belin-Blank Center at The University of Iowa. Both districts indicated that they use the scale as specified by the authors. A description of suggested use of this scale was detailed in the literature review of Chapter II on pages 33-34. Also, a copy of this scale can be found in Appendix A.

Although all seven districts indicated the formation of a placement committee each time a student is recommended, three of the districts (D, F, and G) left the final decision of acceleration in the hands of the building principal; while the other four (A, B, C, and E) put the decision in the hands of the placement committee assessing the student. Districts A and D indicated that if the committee could not come to a consensus on the recommendation, an appeal to the superintendent would be the next step. These two districts also indicated that parents could appeal to the superintendent if they did not agree with the decision of the committee.

Acceleration policies within school board policies.

Districts D and F included acceleration within their current standard school board policies. District F specifically outlined procedures to be followed, which included gathering test scores and a social history, forming a committee, holding a

conference, planning the transition, appealing the process, and implementing a follow-up process to assess the success of the acceleration. This district also specified criteria in their policy, which included ITBS scores of 97% or greater, a grade point average of 3.5 or better and a score on the Cognitive Abilities Test of 130 or more, as well as teacher recommendations.

District D added language pertaining to acceleration to their current board policy on promotion and retention. One paragraph simply read:

> Students with one or more exceptional abilities who, in the judgment of administrative and certified personnel, would benefit from acceleration in the education program may take classes in areas beyond their current grade level or participate in other approved forms of acceleration. Parents/guardians shall be contacted and agree to the acceleration of the student.

In considering acceleration, an addendum to this particular policy of promotion and retention listed six criteria to include but not be limited to the following:

- Teacher's written recommendations illustrating abilities, social behaviors, and emotional behaviors from present and previous grade levels.
- Individual intelligent quotient score WISC-R of 130 or more.
- Achievement levels of at least two years above the present grade level in the majority of all disciplines as determined by the district's standardized testing program.
- Bloom's taxonomy levels from the IQ test illustrating social and emotional maturity.

- Parents'/guardians' recommendation and written agreement.
- Present chronological grade level.

Policy for mathematics acceleration.

Mathematics and foreign languages are content areas that lend themselves easily to acceleration because they are very sequential and demand specific abilities (Stanley, 1986). As a result, these subject areas are often one of the first in which districts develop acceleration policies.

District E provided an explicit policy for mathematics acceleration used at the elementary and middle school levels. In this district students who meet the following criteria are considered for mathematics acceleration:

- ITBS Math Total at 99th percentile (Iowa norms)
- CAT Quantitative Battery at 99th percentile
- EXPLORE Math at 95th percentile or above compared to grade level BESTS participants
- 90 or better on grade level exit instrument for enriched curriculum
- Iowa Algebra Aptitude Test 90th percentile or above for acceleration into algebra

One qualifying score requires the district to obtain additional scores, but at least two qualifying scores are required for acceleration consideration. Possible options for acceleration include independent study, placement in a higher-level math class, and dual math/science acceleration at the middle school level. Also, students may choose to remain at grade level with an enriched curriculum.

This district also has an explicit plan for testing all seventh graders and accelerated mathematics students in Grades Five and Six for algebra readiness the following year. When the testing is administered in April, those students achieving identified score minimums become part of the "algebra talent pool" and proceed to the next level of consideration. Minimum scores include the 80th percentile using Iowa norms for the Iowa Test of Basic Skills for seventh graders, the 90th percentile for sixth graders and the 95th percentile for fifth graders. Students also must demonstrate scores of a minimum of the 80th percentile on the Iowa Algebra Aptitude Test, with a combined minimum of 170 points for seventh graders, 180 points for sixth graders, and 185 points for fifth graders.

Those students who successfully achieve the test scores indicated in the first level are evaluated by their mathematics teacher using a rubric to assess their progress and grades, life and work skills, and thinking and reasoning ability, and self-regulation. Students must score a minimum of 22 points on the rubric in order to be considered for algebra class. Students who successfully meet the criteria of levels one and two must commit along with their parents to the goal of five years of mathematics before graduation from high school.

In conclusion, although the policies that were reviewed dealt mostly with subject and grade acceleration, the survey did indicate that both the districts with written policies and those without such policies do allow other forms of acceleration. These forms of acceleration tend to be interwoven into the teaching strategies employed by the district. Sixty-nine percent of those districts returning surveys indicated that they had an implied unwritten policy involving acceleration.

Responses: Part II, Question D

Question D in Part II of the survey asked educators to list the number of students in their school districts or schools that participated in the following acceleration practices during the 1996-97 academic year, broken down into elementary school, junior high school and senior high school grade levels: (a) early admission into kindergarten, (b) early admission to first grade, (c) early admission to middle school or junior high school, (d) early admission to high school, (e) early graduation from high school, (f) moderate grade skipping, (g) radical grade skipping, (h) compacted curriculum, (i) single-subject acceleration, (j) continuously-paced progress, (k) fast-paced courses, (l) Advanced Placement courses, (m) dual enrollment, and (n) other.

If the acceleration practice listed was one that the district or school had never used, participants were asked to respond with N/A (not applicable). If the practice was one that the district or school had used in the past but did not employ during the 1996-97 academic year, participants were asked to respond with a zero.

Practice 1 dealt with early entrance into kindergarten. No schools reported having students who were involved in this practice during the 1996-97 academic year. While 21 (75%) out of 28 schools indicated that it had never been implemented, 7 (25%) out of 28 indicated that although it had not been used as an acceleration practice for the indicated school year, the practice had been implemented at some time in the past. Two of the 21 schools that had never used the practice indicated that the state law requiring students to be five by September 15 of the year they enter kindergarten was the determining factor.

Practice 2 dealt with early entrance into first grade. While 12(40%) out of 30 schools reported that the practice has been used in their district at some point in the past, only 4 (12%) reported using this practice during the 1996-97 academic year. Twenty-nine out of 39, 701 students at the elementary level in the surveyed schools, or .07%, were involved in early entrance into first grade for the surveyed school year. One large school district in the area that promotes such a practice accelerated .16% of its elementary students into first grade one chronological year ahead of schedule.

Practice 3 dealt with early entrance into junior high school. The data revealed that 15 (54%) out of 28 districts that reported on the practice allow this practice in their schools, but only 3 (11%) actually had students involved in the practice during the surveyed year. The students that were accelerated at this level numbered 144 (0.8%) of the total junior high population of 17,199 included in this survey.

Practice 4 dealt with early entrance into senior high school. The data showed that 13 (46%) out of the 28 districts allowed the practice, but only 7 (25 %) had students that actually took advantage of the practice last year. Out of the 21,291 senior high students in the schools that completed the survey, 744 (3%) were found to enter high school early.

Practice 5 dealt with early graduation from senior high school. The data indicated that 21 (72%) out of the 29 districts allow this practice and that 16 (55%) had students that took advantage of this option during the 1996-97 academic year. One hundred and one students representing 0.5% of the 21,291 senior high students represented by this survey graduated early from high school during the 1996-97 academic year.

Practice 6, moderate grade skipping, was defined in the introduction as skipping one grade level during an educational career. It was found that 22 (71%) of the 31 schools responding to the question indicated that their district has employed the strategy in the past, while 12 (39%) indicated that students in their district were involved in moderate grade skipping during the 1996-97 academic year. One hundred and sixty-nine students out of 75,396 or a mere 0.2% had accelerated one grade.

Practice 7, radical grade skipping, was defined in the introduction as skipping two or more grades during an educational career. It was found that 11 (39%) out 28 schools indicated that the practice is allowed in their schools, but only 1 (4%) district had students enrolled during the 1996-97 academic year that had been radically grade-skipped in their educational careers. It was reported that only 6 students out of the total of 75,396 in the survey had participated in radical grade skipping. This represented a mere .008% of the students represented by this survey.

Practice 8, compacting curriculum, was defined in the introduction as testing out of mastered curriculum and spending the extra time on enrichment activities or an independent research project of particular interest. It was reported that 24 (83%) out of 29 schools allow compacting of curriculum, but only 17 (59%) actually had students using the practice during the 1996-97 academic year. The surveyed schools listed almost 2,250 students involved in using compacted curricula. Two districts supplied no numbers but indicated "several" and "tons." As a result, the investigator was not able to tabulate a true percentage of students benefiting from compacted curricula. An estimate of 3.0-4.0% was established by using the known figure of 2250 and and estimated figure of 3000.

Practice 9 involved acceleration in a single subject area. It was reported that 25 (83%) out of the 30 districts that responded allow this practice in their district, and that 24, representing 80% of the responding districts had students involved in this practice during the 1996-97 academic year. Several districts indicated that this practice was used primarily in mathematics. One thousand seven hundred and ninety-five students (2.4%) out of 75,396 represented in the survey, were involved in this practice during the 1996-97 academic year.

Practice 10, continuously-paced progress, was defined in the introduction as progression through the curriculum at varied paces moving ahead when readiness is demonstrated, regardless of grade level. Collected data showed that only 7 (27%) out of the 26 schools that supplied data for this question, have ever used this practice in their school districts and only 2 (8%) had students actually engaged in this practice during the 1996-97 academic year. Only 11 (0.015%) students out of 75,396 were involved in progressing at their own rate during the 1996-97 academic year.

Practice 11, fast-paced classes, were defined in the introduction as classes in which students could complete two or more courses in a discipline in an abbreviated time span. Collected data showed that only 8 (29%) of the 28 respondents indicated that such a practice had ever been used, and only 5 (18%) indicated that it was in use during the 1996-97 academic year. Only 169 out of 75, 396, 169 students were involved in fast-paced classes last year, totaling to 0.224 % of the total students represented in the survey.

Practice 12 involved Advanced Placement classes for the College Board. Survey data indicated that 18 (60%) out of 30 schools offered these classes to their

students in the past and that 17 (57%) reported offering them during the 1996-97 academic year. Over 7% (1504 out of 21,291students) were enrolled in these AP classes during the 1996-97 academic year.

Practice 13, dual enrollment, was defined in the introduction as enrollment on two campuses at the same time, such as junior high school and senior high school, or senior high school and college. It was found that 28 (90%) of the 31 districts responding to this question indicated that they have had students involved in this activity in the past, and 25 (81%) indicated that they had students dual enrolled during the 1996-97 academic year. Dual enrollment involved 2251 out of 21,291 students from the surveyed schools in Central Iowa, representing a substantial 11% of the senior high school population.

Question D of Part II concluded with Question 14 in which participating schools were given the opportunity to list other forms of acceleration they may have used. A total of 6 (19%) out of 32 schools responded that students in their district have been involved in other acceleration practices in the past, while 5 (16%) indicated that students were involved in these activities during the 1996-97 academic year. A total of 58 (0.080%) out of 75,396 were involved in other acceleration activities last year. Two schools each listed 5 and 6 students, respectively, that were involved in independent study at the senior high school level, while another school listed five students taking a college-level correspondence course. Three other schools provided numbers of students involved in other activities but did not specify what these activities included.

Table 2 found on page 70 summarizes the results of Question D in Part II of the survey. Educators were asked to indicate the number of students engaged in the

Table 2

Acceleration Practices of Schools of AEA 11 in Central Iowa

Acceleration Practice	% usage 96-97	% total usage	% students
Early entrance-kindergarten	0	22	0
Early entrance-first grade	12	40	0.07
Early entrance-junior high school	11	54	0.8
Early entrance-senior high school	25	46	3.0
Early graduation	55	72	0.5
Moderate grade skipping	39	71	0.2
Radical grade skipping	4	39	0.008
Compacting curriculum	59	83	3.0-4.0
Single-subject acceleration	80	83	2.4
Continuously-paced curriculum	8	27	0.015
Fast-paced curriculum	18	29	0.224
Advanced Placement classes	57	60	7.0
Dual enrollment	81	90	11.0

thirteen acceleration strategies listed. Results included "% usage" in which educators reported if their district used the practice during the 1996-97 academic school year; "%

total usage" in which participants indicated if the practice had ever been used or was at least allowed in their school district; and "% students" which indicates the percentage of students engaged in the practice during the 1996-97 academic year.

Responses: Part II, Question E

In Question E of Part II of the survey, participating schools were asked to list the criteria they used to determine when acceleration practices should be employed. All schools listed more than one criterion, with ITBS scores and teacher recommendation being cited most often. Table 3 on page 72 displays the frequency of use of each criterion. Frequency of response refers to the number of schools or districts that named the selected criterion out of the 32 schools that responded to that question, and percentage of usage refers to the percentage of the 32 responding schools and districts using each criterion.

Responses: Part II, Question F

In Question F of Part II of the survey responding educators were given the opportunity to list specific uses of acceleration that did not have positive outcomes. Out of the districts out of 35 that responded to the survey, 13 (37%) listed such experiences.

In one district, a student who had grade skipped later became a high school drop-out. In another district a student who had accelerated through the curriculum chose to not go to college. Yet another district told of a student who dropped advanced calculus to preserve his or her grade-point average. One student who had

Table 3

Frequency of Use of Specific Criteria to Determine Need for Acceleration Practices

Acceleration practice	Frequency of response	% of usage
Iowa Test of Basic Skills (ITBS) 97%+	14	44
Teacher Recommendations	12	38
Report Card Grades	5	16
Parent Recommendations	5	16
Iowa Algebra Aptitude Test	4	13
Iowa Acceleration Scale (IAS)	4	13
Individual Basis	3	9
Intelligence Quotient Tests (125+)	3	9
Desire of Student	2	6
Demonstrated Abilities	2	6
Out-of-Level Tests (Explore, ACT, SAT)	2	6
Motivation of the Student	1	3
Social Development	1	3
Structure of the Intellect Tests (SOI)	1	3
Portfolios	1	3
Interviews	1	3
Test Against the Curriculum	1	3

accelerated through the mathematics curriculum elected not to take mathematics during his senior year of high school.

Two districts told of experiences in which students were not successful in their acceleration and had to return to their original classes. One responding teacher pointed to an instance in which a young student had been accelerated based on his first set of ITBS scores. However, as the student matured, he did not appear to be as bright as originally concluded. The teacher was faced with allowing the student to continue to struggle or moving him or her back to his or her original grade level. The final decision was not revealed in the survey.

Another teacher listed transportation as a problem because students changed buildings each day for accelerated mathematics classes. Still another district indicated that a student that dropped out of an accelerated high school program because the program was located outside of his school district. That particular student did not want to spend time away from friends in a different high school environment even though he was still able to spend half of each day in his "home" school. Two educators mentioned that some students were not receptive to acceleration because either they did not want to be singled out or they were very involved in high school activities and did not want the extra work of a more challenging curriculum.

Responses: Part II, Question G

In a final open-ended question on the survey, Question G in Part II, schools were asked if they would like to note any other experiences with acceleration that occurred in their school district either during the current school year or before the past

school year. Six districts(17%) out of 35 took the opportunity to respond to this question.

One educator listed successful accelerations in science in both the junior and senior high schools. Another listed several successful grade skipping experiences at the elementary level over the past six years. One TAG teacher mentioned a student who is currently in the sixth grade. She grade skipped from kindergarten to second grade several years ago and has consistently been at the top her class both academically and socially. Another TAG administrator reported that 42% of the graduates of an accelerated magnet high school that serves the Central Iowa region enter college at the sophomore level.

In one district of approximately 1500 students, the TAG coordinator sent a full page of notable experiences with acceleration. For example, during the 1993-94 academic year, a student in this district successfully accelerated from second to fourth grade and continues to do well today. The same district allowed a male student to begin acceleration in mathematics during the 1995-96 academic year as a seventh-grader. Currently he is a high school sophomore taking Advanced Placement calculus and biology. He also is taking a class entitled Computer Consultants in which he is able to assist teachers in the district with computer concerns. Next year he plans to attend Drake under dual enrollment and take computer programming classes.

This same district listed two eighth-grade boys who took Advanced English 9 as eighth-graders and will be attending the Iowa Summer Institute on the Arts and Sciences for the Creative Writing Component during the summer of 1998. The district listed three eighth-grade boys taking high school level mathematics this year: a sixth-

grader taking pre-algebra and two eleventh-grade girls taking Advanced Placement in both calculus and biology and acting as computer consultants.

The TAG coordinator who completed this particular survey indicated that the most notable experience was that there had been a change in attitude of the teachers and administrators regarding the needs of the gifted in general and acceleration in particular. Once the district formulated a written policy about acceleration and the teachers began to witness how well students progressed and even thrived as a result of these acceleration practices, teachers became much more receptive to acceleration.

At the end of the survey, participants were asked if they would like a copy of the results mailed to them. Out of the 36 participants that responded, 27 (75%) requested a copy of the results.

In conclusion, there were many results to be tabulated and evaluated from this survey. Some results were recorded by frequency while others involved a careful qualitative analysis. Conclusions and recommendations from these results will be summarized in Chapter V.

Chapter V

Summary, Conclusions, and Recommendations

Summary

In this age of school reform, it is important that educators rethink every aspect of how students are educated today. The lock-and-step system of grade level being determined by age and students advancing to the next grade en masse each 12-month period with their age-mates is outdated. It needs to be replaced by an educational system in which all students are appropriately matched with curriculum that is challenging and at their level of development.

A review of the literature found that the experts agree that acceleration is an educational strategy that is successful for many gifted and talented students. Students who have been allowed to accelerate have higher academic achievement and suffer from few, if any, social or emotional problems because of acceleration. It has been found that, for some highly gifted students, the lack of opportunity to accelerate causes harm in the form of feeling out of place and developing poor work habits. Other research has shown that acceleration sometimes can reverse the effects of underachievement, especially if the roots of this underachievement come from the academic setting, not home environment.

The review of the literature also showed that the special acceleration programs that have sprung up throughout the United States to meet the needs of the highly gifted have been quite successful. The Study of Mathematically Precocious Youth (SMPY) headed by Camilla Benbow at Iowa State University, its parent program, the Center for

Talented Youth (CTY) headed by Julian Stanley at John Hopkins University, and the Education Program for Gifted Youth (EPGY) at Stanford University all have contributed to identifying and serving the needs of precocious youth. Studies show that the students that have been served by such programs are very successful in both high school and as early entrants into college.

A review of current national policies and practices in the area of acceleration showed that few schools have written policies and that many schools have policies, either expressed or implied, that forbid some types of acceleration such as grade skipping. One national study showed that only 1.3% of eighth-grade students had grade skipped at least once during their first nine years of school. A look at the distribution of intelligence quotients in the United States shows us that we might expect at least 2.14% of the population to have an IQ of 130 or above, a level at which experts believe these students might be capable of and in need of accelerated academic activities.

The literature also indicated that rural gifted students are underserved due to lack of resources and policies. It also showed that teachers and administrators often have biased opinions against acceleration, due to lack of knowledge or experience with acceleration strategies.

In order to develop a written policy for the Dallas Center-Grimes Community School District, the investigator felt it was necessary to assess the status of acceleration policies and practices in Central Iowa and to compare that assessment with results of the literature review. As a result, a survey was created and sent to educators in Central Iowa.

The results of the survey showed that most responding districts and schools in Central Iowa allow acceleration, but few have written policies. It also indicated that at the secondary level, highly gifted students have many opportunities for acceleration which include Advanced Placement classes, dual enrollment, early entrance into junior and senior high schools, correspondence classes, and early graduation from high school. For younger students, the opportunities are less available. The survey also indicated few students are allowed to enter elementary school early, grade skip, or participate in continuously-paced classes. Curriculum compacting was found to be used with an estimated 3.0-4.0% of the school population of the responding school districts.

Using the collected data, the investigator carefully analyzed the results of the survey and compared these results to national trends and current research in order to draw conclusions about the state of acceleration policies and practices in the schools of Central Iowa. From these conclusions, the investigator developed acceleration recommendations for the schools of Central Iowa and also offered specific recommendations to develop a formal, written policy for the Dallas Center-Grimes Community School District. Recommendations for further research are also presented.

Conclusions

The following conclusions were organized around the sequence of questions contained in the survey. In order to draw conclusions and make comparisons about the adequacy of numbers of students involved in particular acceleration practices, the investigator compiled Table 4, Expected IQ Distributions of Students Represented by the Acceleration Survey of Central Iowa. The table was developed by using both the

Table 4

Expected IQ Distribution of Students Represented by Acceleration Survey of Central Iowa

SD	IQ	% in pop.	Elementary	Junior high	High school	Total
1 SD	115+	(15.863)	5854	2727	3379	11960
2 SD	130+	(2.273)	839	390	485	1714
3 SD	145+	(0.133)	49	23	29	101
4 SD	160+	(0 .003)	1	1	1	2-3

numbers of students represented in this survey and the expected distribution of intelligence quotients in the United States population from Assessment of Children written by Witt, Elliot, Kramer, and Gresham (1994). The investigator cautions that these tabulations have been extrapolated from the normal bell curve of IQ distributions and are simply approximated figures. The investigator also reminds the reader that measures of IQ are simply one measure of general intelligence, one of the areas of giftedness as defined by the Marland Report in 1972 and that IQ scores generally have a standard error of 2-3 percentage points (as cited in Borland, 1989). The investigator will refer to these figures in drawing conclusions about the adequacy of numbers of students involved in accelerated activities in Central Iowa schools. These figures should represent a minimum number of students that might be considered for gifted and talented programs because they identify only those with general intelligence. However, recall that according to Feldhusen (1998), precocious students often have strong talents in several areas and possess an overall general intelligence.

Conclusions: Part II, Questions A-C.

With regard to the results of Question A in Part II of the survey, it is clear that acceleration practices *are* allowed in the school districts and private schools in Central Iowa. A resounding 34 (94%) of the 35 reporting schools allowed acceleration in some form in their classrooms. Nationally, Reis and Westberg (1994) reported that 57% of middle and secondary schools recognized informal unwritten policies that forbid acceleration. Results of this survey show that schools in Central Iowa are taking a proactive stance on acceleration practices by keeping the door open.

With regard to Questions B and C in Part II of the survey, only 7 (22%) of the responding 35 schools in Central Iowa were found to have a formal written policy about acceleration. However, a majority of 24 (69%) do indicate that they have an informal, unwritten policy that allows acceleration. On a national level, Reis and Westberg (1994) reported that only 15% of responding middle and secondary schools had a formal, written policy about grade skipping.

Since so few written policies on acceleration exist in the surveyed school districts, it is reasonable to assume that decisions are made often at the discretion of individual teachers or principals. With no procedures or criteria as guidelines, the decision whether to accelerate is often arbitrary and haphazard. Administrators and teachers are not always skilled in recognizing the needs of gifted and talented students and knowledgeable about appropriate strategies that should be employed.

Conclusions: Part II Question D.

Although the majority of the school districts and private schools of Central Iowa have no formal written policies, a closer examination of the responses to Question D in Part II of the survey revealed that most districts have acceleration practices woven into the structure of their programs. Below are some conclusions that can be drawn from the results of the survey about particular acceleration practices these schools currently employ or have employed in the past. These conclusions are framed in order around the 13 acceleration practices listed in Question D on the survey.

According to Belcastro's study in 1995, at the elementary level, only 20% of Iowa school districts reported allowing early entrance into kindergarten, while 78% reported allowing this practice at the national level. In Central Iowa, 13 (40%) of the 30 responding districts indicated that early entrance into first grade is allowed, but only 4 (12%) of the districts had students involved in this practice last year. No districts in Central Iowa reported early entrance into kindergarten, several citing the state law that restricts entrance to kindergarten to students who are 5 by September 15 of the academic school year. In Central Iowa, 29 (.07%) students were accelerated by entering first grade early. If according to Table 4, eight hundred thirty-nine students at the elementary level can be expected to have an IQ of 130 and 48 of those can be expected to have an IQ of 145+, it could be expected that more than 29 might be good candidates for early entrance into elementary school. One might conclude that Iowa lags behind other states in allowing early entrance at the elementary level. An inference might also be drawn that the very young gifted students in Iowa are often unidentified and underserved.

This study found that, with the exception of early entrance into elementary school, early entrance into other educational arenas is a practice that is accepted and widely practiced in Central Iowa. At the junior high school level, 144 students were allowed to enter early last year, while at the senior high level, 744 students entered at a younger age than expected. If we expect 390 students at the junior high school level and 485 students at the senior high level to have IQs at 130+, it could be concluded that the figures for Central Iowa are very respectable.

In the Richardson Study: U.S. vs. Iowa completed by Belcastro (1995), 40% of the reporting school districts in Iowa responded that early entrance into junior high school was allowed whereas only 15% of the schools on the national level reported allowing such a practice. In the schools of Central Iowa that responded to this survey, 15 (54%) of 28 schools reported using the practice in the past, while 3(11%) used it during the 1996-97 academic year. In Belcastro's study, 53% of the senior high schools in Iowa reported allowing early entrance into senior high, while only 16% allowed such a practice nationally. In Central Iowa 13 (46%) of the 28 reporting schools noted using such a practice in the past while 7 (25%) reported using it during the 1996-97 academic year. The number of schools that allow early entrance at the junior and senior high levels in Iowa is greater than the national average, corroborating the statistics in the previous paragraph showing that Iowa is leading the way in allowing students to enter its secondary schools at an earlier age than normal.

In the area of early graduation from senior high school, 101 (0.5%) students in Central Iowa earned enough credits to graduate from high school at an earlier-than-expected age. If we expect 485 high school students to have an IQ of 130+ and about

one- fourth of those high school students to be seniors, it could be predicted that approximately 120 students might be capable of graduating from high school early. The schools in Central Iowa appear to be facilitating early graduation for their students.

In the area of moderate grade skipping, 2 out of 1000 students in Central Iowa were involved in the practice last year, whereas Reis and Westberg (1994) found in their national study that only 2 out of 10,000 secondary students nationally had been grade skipped during their school career. According to Reis and Westburg, at the national level, most districts with no acceleration policy responded that grade skipping was not allowed in their schools. This low percentage corroborates research conducted by Sayler and Brookshire (1993) which found that only 1.3% of a national sample of eighth grade students had been accelerated at some point during their school career.

In Central Iowa during the 1996-97 academic year, there were 169 students (0.2%) who had skipped at least one grade during their school career and 6 (0.008%) who had skipped at least two grades. Many schools that do allow grade skipping have a minimum criterion of 130 on an intelligence test. If we expect 1714 students in the total population of the surveyed schools to have an IQ of 130+, then we might expect to see more students involved in grade skipping in Central Iowa. If 101 students would be expected to have an IQ of 145+, we would expect to see more than 6 students who have been involved in radical grade skipping. It could be concluded that school districts in Iowa basically follow the trends found nationally for moderate and radical grade skipping, and that more students should be expected to be considered for this form of acceleration..

According to the results of this survey, curriculum compacting is used widely in Central Iowa schools. Well over 2250 students were reported to have had at least some of their curricula compacted during the 1996-97 academic year. This may be, in part, a reaction to the inclusion movement that has permeated gifted education in the past few years and the workshops led by Susan Winebrenner, author of Teaching Gifted Kids in the Regular Classroom, and her student, Danute Krebs, that filled the Heartland Area Education Agency (AEA 11) schools during the last two years. Their influence has brought curriculum compacting into the limelight as schools react to inclusion and look for ways to serve their gifted students from within the regular classroom.

If 2250-3000 students were involved in curriculum compacting in the surveyed schools during the 1996-97 academic year, that still represents only 3.0% to 4.0% of the student population in these schools. We might expect that most of the students with an IQ of 115+ might benefit from some sort of curriculum compacting. That would involve 11,960 students from the Central Iowa area. We could eliminate high school students because of all the other acceleration opportunities that are available to them, such as AP classes and dual enrollment. However, if we considered only the elementary and middle school students in the surveyed schools, we would still be considering over 8500 students who would be in need of and eligible for curriculum compacting. As a result, although the numbers for curriculum compacting look impressive, there are still many more students who could benefit from this practice.

It is also clear from this study that single-subject acceleration is used more widely as a means of acceleration than grade skipping in the schools of Central Iowa. A full 83% of the 30 reporting districts recorded students accelerating in one subject area

for the 1996-97 academic year. This involved 1,795 students. Since 1,714 students might be expected to have an IQ of 130+, a minimum score often used for some types of acceleration such as content acceleration (Assouline, Colangelo, & Lupowski, 1993), it appears that the schools of Central Iowa represented in this survey are doing a good job at involving adequate numbers of students in single-subject acceleration.

In Central Iowa, it appears that few schools use continuously-paced progress or non-graded schools as part of their program design. Only 11 (0.015%) students were involved in that activity last year. More schools did offer fast paced courses, but only 169 (0.1%) students in the surveyed schools were involved. Both of these practices serve a useful purpose in providing individualized curriculum for some students but are vastly underused in the schools represented in this survey.

Two areas of acceleration in which the surveyed schools of Central Iowa seemed to lead the way are Advanced Placement classes and dual enrollment. A full 60% (18 out of 30) of the surveyed schools reported offering AP classes to their students, and 7% (1504) of the high school population partook of these classes.

In the area of dual enrollment, the surveyed schools also demonstrated impressive statistics. A full 11% (2251) of the high school population were involved in dual enrollment last year while 10 junior high school students were involved by taking both junior high school and senior high school classes.. Given the numbers of senior high school students that would be expected to have IQs of 130+ (485) and 115+ (3379), we find a proportional number of students involved in AP classes and dual enrollment at local colleges in the area. However, we might expect to find more students dual enrolled in both junior high school and senior high school classes.

During the 1996-97 academic year, 42% of the graduates at a magnet high school for the gifted were able to begin college at the sophomore level due to dual enrollment and AP classes. Dual enrollment in both high school and college allows these students to pursue the challenge of college-level classes while still enrolled in senior high school. These students were able to participate in extra-curricular activities at their senior high school while having their needs met with curriculum at their level. Again, the schools in this survey have been doing a good job at the secondary level in facilitating accelerated classes for their students.

Conclusions: Part II, Question E-G.

Responses for Question E indicated that the surveyed school districts used a variety of criteria to evaluate students for acceleration. Most reported using ITBS scores and teacher recommendations. A few used the WISC-R individual intelligence test or the Cognitive Abilities Test and looked for scores of 125+. Students who met this criterion were then required to move through additional screening which involved observing social and emotional development as well as academic profile and work habits. Only two schools reported using the Iowa Acceleration Scale as a way to evaluate students for grade or content skipping even though this assessment tool was designed specifically to guide educators and parents in decision-making about acceleration. The investigator was surprised by this result and concluded that possibly many school districts are unaware of the existence of the IAS or due to lack of knowledge, are still quite resistant to pursuing the option of grade or content skipping with any of their students. Although schools reported using a variety of assessment

tools, since most schools have no written policy about acceleration, the use of these tools seemed to be haphazard and at the discretion of the teachers involved.

When asked to list negative experiences with acceleration in Question F, few responses were given. Thirteen districts each reported one incident, but it is the perception of this investigator that most of these could have been avoided by carefully evaluating and selecting students before employing acceleration. One incident involved a student who had been advanced in mathematics and then chose not to take mathematics during his/her senior year. Another involved a student that dropped an advanced mathematics class in order to preserve his or her grade point average. Such administrative issues should be resolved so that students are not penalized for taking more difficult, advanced classes, especially when scholarships hinge on grade point averages.

Most of the other negative experiences involved situations in which students chose not to continue or to get involved in acceleration because of social concerns. Either the students did not want to be separated from their friends or they did not want to give up the extra-curricular activities they would miss by accelerating. Others did not want to give up the time that the more challenging work could involve. These negative experiences did not seem to be wide-spread, and some could have been avoided by screening more carefully or facilitating the acceleration more aggressively. It is the opinion of this investigator that there were no major, wide-spread problems with acceleration reported.

In responding to Question G of Part II, only 6 participants felt compelled to answer; but these six sent a wealth of information about successful experiences with

acceleration. Anecdotes showed many years of successful grade skipping and dual enrollments. One teacher noted that her colleagues were much more receptive to acceleration because they have seen it work. The investigator of this study concluded that once teachers and administrators have seen how successful acceleration can be in meeting the needs of gifted students, they too will be more receptive to facilitating acceleration strategies in their classrooms and school districts.

In conclusion, the results of this survey showed that the state of acceleration practices in the schools of Central Iowa is fairly healthy. At the secondary level, schools in Central Iowa lead the way with a substantial number of students taking part in AP classes, dual enrollment, and early graduation from high school. At the elementary level, however, more students need to be allowed to enter school early, grade skip, use curriculum compacting, and continuously-paced classes.

Recommendations

The recommendations offered in this paper are two-fold. First, based upon the results of the comprehensive literature review and the survey completed by the school districts and schools of Central Iowa, the writer offers recommendations to these schools on the topic of acceleration in order to bring their policies and practices to the level that current research suggests. Second, the author proposes a written policy on acceleration for the Dallas Center-Grimes Community School District, a partially rural district of 1,500 students in Central Iowa. This policy may serve as a model for other school districts in the area that serve a similar constituency.

Recommendations for Central Iowa.

In order to ensure that all students have the opportunity to learn at the appropriate rate, while using the appropriate curriculum, it is recommended that all school districts take a proactive stance and formulate a written policy that allows acceleration in their schools. Districts that have a policy prohibiting such strategies as grade skipping should reverse these policies, and those that currently do not have such a policy should put together a committee of teachers and administrators to study the topic and implement a policy allowing such practices. Simply allowing acceleration to happen informally is not enough. Schools need to implement a formal, written policy spelling out the criteria and procedures to put acceleration practices into place. These policies are necessary to eliminate the ceiling of learning that is currently in place for many gifted and talented students in school districts in Iowa and in the United States as a whole. These policies are necessary to ensure that curriculum is constantly and consistently matched to students' learning rates.

Within their written policies and schedules, it is recommended that school districts provide adequate flexibility that allows for grouping and regrouping as the need arises. Educators need the flexibility to cluster group within a class, to group elementary and junior high school students for an advanced mathematics or reading class, or to group students for an Advanced Placement class.

It is recommended that school districts allow for early entrance into elementary school as well as junior high and senior high school. It is very important that very young gifted students not be ignored. They need to be encouraged and challenged early

in life so that they learn good work habits, such as completing quality work and sticking with a task that is difficult. For example, five-year-olds who know how to read should be allowed to read, not expected to work through the charade of reading readiness activities with their classmates. They should be given wings and allowed to soar. According to the distribution of intelligence quotients for the students represented by this survey, about 839 students of the elementary population represented in this survey would be expected to have an IQ of 130 or above. If only one-sixth of that group were in kindergarten, one might expect to find at a minimum of 140 students at the kindergarten level with an IQ of 130 or above. One could expect to find 8 with an IQ of 145 or above. With careful screening, several of these students might have been considered candidates for early entrance into first grade. All schools in Iowa and all schools across our country should have provisions that allow students to enter any academic arena at an earlier age than is normally expected if there is a need and if the students will benefit academically from such a policy.

As to early graduation from high school, the doors should be kept open so that substantial numbers of students can take advantage of this opportunity as they have been able to do in the past. It is recommended that school districts ensure that their administrative policies do not penalize these students in terms of scholarships and college admissions. Records need to reflect accurately their accelerated work, the unusual age of their accomplishments and the demands of the option they selected. Records should indicate when classes are advanced. College admission officers need a true picture of students' abilities and accomplishments in order to consider them for admission and scholarships, especially at prestigious universities and colleges where

competition is keen. Although these students have been successful in school, they have not had as much time to earn awards; and because they have taken advanced classes at a younger age than the other students in their classes, their grade point average may not be as high. Some accelerated students may not meet all the graduation requirements in terms of credits and Carnegie units, yet they are clearly ready to advance to college level work. Credit by examination, fast-paced classes and other accommodations should be made to allow them to advance as needed.

Schools also need to provide support in accelerated placements so that if courses are too difficult, students may leave without penalty. The school district needs to ensure that the accelerated options that students choose do not bring them to a dead end in terms of more advanced work available at the high school level. Schools need to take a proactive stance on these issues to be sure that students who accelerate do not face penalties or other roadblocks farther down the road.

In the area of grade skipping, it is recommended that parents, teachers, and administrators are educated about the advantages of this strategy for some carefully selected students. Research has shown that most educators are not in favor of grade skipping (Jones & Southern, 1992). Opposition may range from fearing that students will be harmed emotionally and socially by grade skipping to the belief that there will be no harm done if they are not grade skipped. Research shows that both of those beliefs are untrue for most very gifted and talented students (Feldhusen & Moon, 1992; Kulik& Kulik, 1984, 1992; Rogers, 1991; Van Tassel-Baska, 1989). Educators in gifted education need to do a better job of dispelling the fears of parents and other

teachers about grade skipping to ensure that more students can take advantage of this strategy and acquire the accelerated education they need to develop to their potential.

Although the use of compacted curriculum as an accelerative strategy seems to be used quite extensively in Central Iowa, it is recommended that teachers of the gifted and talented consistently train, model, and encourage its use in their respective schools. Gifted students are not just gifted during the two hours they spend with a TAG teacher each week. They are gifted full time and deserve a full time accelerated curriculum that meets their needs all of the time. TAG teachers can play an instrumental role by encouraging and helping classroom teachers constantly modify the curriculum for their gifted students.

It is recommended that as districts in Central Iowa study ways to restructure their schools, they consider implementing continuously-paced progress programs, also known as non-graded classes. In such programs, students move through the curriculum at their own pace, not one dictated by age and grade level. Non-graded schools can ensure that gifted students can learn at an accelerated pace on a constant basis.

It is recommended that all qualified high school students in Central Iowa have access to Advanced Placement classes in all core curriculum areas. Currently 60% of responding schools offer these to their students. In order to ensure that all capable students have access to the Advanced Placement courses they need, these classes should be taught over Iowa Communications Network (ICN) or recorded on videos and sent to students that need them and do not currently have access to them in their schools.

It is recommended that all capable, qualified students have access to dual enrollment. For those students who do not live in close enough proximity to a college or university, there should be opportunities provided to take correspondence classes, college classes offered over the ICN, programmed classes on the computer, or classes that are videotaped. There should be access to both the Internet for classes and information and e-mail to communicate with college professors and other gifted students. Educators need to ensure that opportunities exist for all of our capable students, especially those in rural schools. They also need to ensure that students receive proper college credit for their work and are not penalized in any way in terms of credits accrued, grade point averages, and scholarship opportunities.

Senior high school students also should have the opportunity to earn credits by simply passing a qualifying examination. For example, if students can test out of a class before actually taking the class because they have already mastered the material, that option should be available to them. Some students will be able to study the material on their own in order to pass the final examination for the course, while others will simply have mastered the material through earlier exposure. In either case, credit by examination should be an allowed practice in all school districts.

It is recommended that, as schools develop a policy for acceleration practices, they specify which assessment instruments will be used, based on availability and the needs of the students involved. Most schools in Central Iowa have access to the Iowa Test of Basic Skills (ITBS) or the Iowa Test Of Educational Development (ITED) scores or some other achievement test scores. In some academic areas there are specific assessment tools to evaluate abilities in those particular areas. An example

would be the Iowa Algebra Scale to measure math abilities, specifically readiness for algebra.

It is also highly recommended that schools become familiar with the intent and use the Iowa Acceleration Scale from the Belin-Blank Center at The University of Iowa for students who are being considered for grade skipping, single subject acceleration or early entrance into school. This assessment tool was designed specifically to guide educators and parents in decisions about acceleration and provides a useful evaluation..

It is recommended that school districts ensure that their teachers, administrators, and other staff are adequately trained to work with gifted and talented students. It is often the classroom teacher who is the first to recognize that a student has needs that cannot be met within general education. These teachers need to be prepared to recognize the characteristics of gifted and talented students and to employ acceleration and enrichment strategies when appropriate. School districts need to do a thorough job of providing professional development opportunities for their staff in the area of gifted education, particularly acceleration practices. Both time and funding need to be made available to accomplish this goal.

It also is recommended that accelerated students receive timely counseling about college admissions, career choices, and high school activities that may be cut short or missed altogether. Students who choose to accelerate may not be eligible for high school sports or may miss other extra-curricular activities and should be forewarned and prepared for this. For many, the desire to accelerate, to become immersed in challenging material, and to develop friendships with intellectual peers outweighs the desire to participate in senior high school extra-curricular events; but for

some, acceleration will not be the correct choice due to missed social activities. Both elementary and secondary educational counselors need additional training in the academic, social, and emotional needs of gifted students.

Recommendations for further study.

The results of this study reflect a need for similar investigations initiated in the schools of Central Iowa in regard to acceleration and related topics. For example, a survey of the attitudes and perceptions of teachers, administrators, and parents is needed to understand their resistance to accelerative practices. Change will come only through understanding and a change in perceptions. A qualitative study of students who have been involved in acceleration over the past 5 years would most likely help alleviate some fears and shed some light on the pitfalls to avoid long the way. A follow-up study of the school districts and private schools of Central Iowa in five years would be useful to discern the amount of progress in the area of acceleration and whether all of the schools in Central Iowa have implemented a formal explicit policy that allows a full range of acceleration to promote learning in their schools.

Recommendations for the DC-G School District.

Following are the recommendations to the Dallas Center-Grimes Community School District for the development of a written policy for academic acceleration. It is hoped that these recommendations can serve as guidelines for neighboring school districts in Central Iowa with similar constituencies.

The first recommendation is to develop a rather broad board policy on academic acceleration. Specifically, it is recommended that the Board of Directors for the Dallas Center-Grimes Community School District consider amending board policy by inserting the following paragraph between paragraph three and four of "Student Promotion and Retention" code 605.3 of the current board policies (see Appendix D):

> Students with one or more exceptional abilities or talents, who, in the judgment of administrative and certified personnel would benefit from curricular acceleration, may take classes in areas beyond their current grade level or participate in other approved forms of acceleration such as grade skipping, early entrance, credit by exam, or dual enrollment, as deemed necessary to meet their educational needs. Both students and parents or guardians must agree to the implementation of acceleration.

Once acceleration is in place as a board policy, it is then recommended that the District Administration accept the specific procedures for considering students for acceleration. First, the referring person, who is usually a parent or teacher, should complete Part I of a referral form for acceleration (see Appendix E) and forward it to either the building principal or TAG teacher for the building. Part I of this form requests basic personal information about the student, current level of classroom performance, assessment scores, and requested acceleration strategy. For students in Grades K-2, assessments should include results from the Kingore Observation Inventory, parent and teacher observations, portfolio items, and other demonstrated

abilities. For students in Grades 3-8, assessments should include scores from both the ITBS and the Cognitive Ability Test (CAT), scores from above-level tests, such as the Explore Test, Scholastic Aptitude Test (SAT), or College Board Achievement Test (ACT), parent, teacher, self, and peer recommendations, projects from portfolios, and other demonstrated abilities. For students in grades 9-12, assessments should include scores from both the ITED and the CAT, scores from above-level tests, such as ACT or SAT, taken before the junior year, current high school grade point average, parent, teacher, and self recommendations, completed projects, and other demonstrations of high ability.

A placement committee should be formed to include a teacher and/or coordinator of the gifted and talented program, the building principal, the guidance counselor, classroom teachers, and parents. This committee will meet to interview the student, consider the current level of classroom performance, and evaluate the completed assessments. If the recommended practice does not involve grade skipping single-subject acceleration, or early entrance and the committee's decision is to recommend acceleration, then provisions should be made to implement this strategy. For example, if dual enrollment in high school and college is suggested, then the talented and gifted (TAG) teacher, guidance counselor and building principal should facilitate that enrollment for the student and his or her family. If compacted curriculum is suggested, then the TAG teacher should work with the classroom teacher designing and modeling this approach.

If the recommended placement involves single-subject acceleration, the Placement Committee should decide if any other assessments are needed to evaluate

the student. For example, if acceleration in mathematics is recommended at the fifth-grade or sixth-grade levels, then the Iowa Algebra Aptitude Test should be given. Scores on ITBS should be at the 80th percentile (Iowa norms) for seventh-graders, the 90th percentile (Iowa norms) for sixth-graders, and the 95th percentile (Iowa norms) for fifth-graders. Iowa Algebra Aptitude Test scores should be at 80th percentile with a combined minimum of 170 points for seventh-graders, 180 points for sixth-graders, and 185 points for fifth-graders. This is Step 1 of the screening process for subject acceleration (see Appendix F).

Students who meet the criteria should be put through another screening, Step 2. In Step 2, teachers assess the nominated students against a rubric of skills, behaviors, and study habits in that particular subject area (see Appendix G). Students who pass that screening should be invited to accelerate if they are interested and have their parent's or guardian's permission.

In Step 3 of the process, those students successfully meeting the criteria of Steps 1 and 2 must commit to the goal of completing five years of mathematics at the high school or college level before graduating from Dallas Center-Grimes High School. This would include taking advanced mathematics classes during the junior and senior years of senior high school. This commitment must be signed by parents or guardians and received by the school before mathematics acceleration begins. Acceleration should begin on a trial basis so that students may return to their previous class if the acceleration is unsuccessful.

If the recommended placement involves grade skipping or early entrance, then the Placement Committee should reconvene to complete the Iowa Acceleration Scale

(IAS) for the referred student (see Appendix A). This scale collects data in four areas: academic ability and achievement, school information, interpersonal skills, and attitude and support. It looks into such matters as support from home, age of siblings, attitude of receiving teacher, and the student's desire to accelerate in coming to a recommendation as to whether he or she should be accelerated. In assessing academic ability and aptitude, the Belin-Blank Center requests that the WISC-R, an individual intelligence test, be administered. It is recommended that the school district employ an educational psychologist to administer this instrument to students referred for grade skipping or early entrance.

Once the IAS has been completed by the Placement Committee, it should be sent to the Belin & Blank Center at The University of Iowa, along with anecdotal material, for evaluation. Upon return of the IAS, the committee should reconvene to consider the results of the evaluation and come to a consensus. If the committee cannot come to a consensus, then the evaluation should be deferred to the superintendent of schools to make the final decision.

If the decision is made to grade skip or enter a building at an early age, then the TAG teacher working at that level should facilitate the move along with the building principal, counselor, and receiving teacher. Assessments should be made to determine if the student will have any gaps in their learning that should be compensated. A student can be tutored or study individually to make up the deficiencies.

Whether acceleration is implemented or not, there should be follow-up monitoring of student progress by both the TAG teacher and building principal.. For referred students who were not accelerated, progress should be noted for possible

acceleration in the future. For students who were accelerated, progress needs to be monitored to ensure success. Results of the follow-up assessments should always be communicated to the parents or guardian and placed in the student's permanent file. If the results of this follow-up assessment indicate that a student needs to return to the previous class or level of instruction for any reason, such as high stress levels or high level of difficulty, this option needs to be made available to the student without penalty.

Diagram 1 , entitled "Referral and Placement Process for Acceleration," can be found in Appendix H. It explains the procedure detailed above in a simple, clear visual representation.

For the purpose of this paper, in the area of single-subject acceleration, recommendations will be made only for acceleration in the area of mathematics. A mathematics curriculum committee helped design and approved the criteria for acceleration in mathematics. It is recommended that curriculum committees for each area of the curriculum meet to set specific criteria for Steps 1, 2, and 3, using the process designed for mathematics as a guide.

It is hoped that the recommendations presented here for the Dallas Center-Grimes Community School District will serve as a model for other districts in Central Iowa as they consider written policies in the area of academic acceleration. This study suggests that all schools in Central Iowa should examine their position on acceleration. All school districts should make certain that they allow and encourage a variety of acceleration practices and guarantee that their practices are explicitly written in a well-thought-out formal policy that is not limiting. Providing accelerative opportunities for gifted students does not and should not take away opportunities for other students.

Prohibiting students from content that that matches their instructional level while others have access to material appropriate for their level is unfair.

According to Jeannie Oakes (1986), a leader in the movement to equalize education for all students, programs for the gifted and talented exaggerate the differences among students and contribute to a mediocre education for those not in the gifted and talented programs. What she fails to realize is that putting students of all ability levels into the same class will not equalize their expectations or accomplishments. Felix Frankfurter, a Justice of the United States Supreme Court, once said, "There is nothing more unequal than the equal treatment of unequals." How true this is in education! An equal, fair education for all does not mean that all students will be taught the same content in the same way at the same time. It simply means that they will have access to an education that suits their needs and learning style. A formal written policy on acceleration for every school district is a big step in ensuring that this happens.

For students, acceleration can offer a higher level of achievement, a sense of accomplishment, exposure to a new peer group, more time for a career at the end of school, and the opportunity to complete a higher level of school sooner. (Feldhusen & Moon, 1992). It also can improve the motivation, confidence, and scholarship of gifted and talented students; it can prevent the development of lazy mental habits; and it can reduce the cost of a college education if college credit is earned in high school (Van Tassel-Baska, 1992).

For school districts, acceleration offers an inexpensive, uncomplicated strategy to meet the needs of gifted and talented students. Many forms of acceleration such as

grade skipping, content acceleration, early admission, early graduation, and dual enrollment require no additional cost. No new teachers are needed; no new curriculum needs to be developed; and no new supplies need to be purchased. Students can simply slip into the educational structure that already exists.

In 1994 Carol Tomlinson wrote, "In general, research indicates that acceleration is a viable and useful educational option for many, but not all, students. A more useful approach than asking whether acceleration is 'good' or 'bad' is asking what we must know in order to match students and acceleration appropriately" (p.47). Educators in the field of gifted and talented education need no longer debate the need for acceleration. They need to determine how best to implement acceleration practices, how to put these practices firmly into the policies of their respective school districts, and how to best educate their colleagues about the importance and necessity of providing acceleration for our gifted and talented students. For, "if a district is to fulfill its responsibility of educating all students to their potential, [acceleration] is too valuable a tool to disrecard" (Southern & Jones, 1991, p. 228).

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APPENDIX A

IOWA ACCELERATION SCALE

THE IOWA ACCELERATION SCALE

The Connie Belin National Center for Gifted Education

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THE IOWA ACCELERATION SCALE (IAS)

PURPOSE OF THE IAS:

While there has been considerable research on the positive effects of acceleration, the decision to accelerate a student remains one of the more difficult and controversial decisions for educators and parents. There is hesitancy because acceleration breaks the "mold" of grade-sequential schooling. Educators and parents are concerned about the effects of acceleration on both the academic and social aspects of the student. There is worry about making a decision that will adversely affect a child.

The Iowa Acceleration Scale (IAS) was developed in response to the important concerns expressed by educators and parents. Its purpose is to provide a comprehensive guide for making decisions regarding:

- Whole-grade acceleration (skipping)
- Early entrance to school
- Early graduation from school

DEVELOPMENT OF THE IAS:

The IAS is the outcome of a thorough review of the literature and research on acceleration, interviews with educational experts, clinical experiences with grade-accelerations, and pilot-testing of the IAS.

SUMMARY OF THE SCALES:

The IAS is comprised of a General Information section and four subscales. The four subscales provide an individualized and comprehensive profile of the student. The subscales cover the four major areas that should be considered when making a decision regarding acceleration. They are:

- Academic Ability and Achievement
- School Information
- Interpersonal Skills
- Attitude and Support

WHAT IS NEEDED TO COMPLETE THE IAS:

- All standardized test scores
- Student's cumulative folder
- Psychoeducational reports (private and/or school generated)

WHO SHOULD COMPLETE THE IAS:

The IAS should be completed by a team of educators and the child's parents. The IAS should be used as a guide in the decision-making process. Team members should include principal, present and receiving teachers, and parents.

HOW TO USE THE IAS:

- Each subscale provides a score and recommendations regarding acceleration are based upon the scores from the subscales and a total score. This total is recorded on the last page of the IAS.
- The IAS manual provides additional information on administration and score interpretation (the manual is still in draft form). Until the manual is complete, the Belin Center staff will serve as consultants to a school requesting the IAS.

This scale was included by permission of Dr. Susan Assouline of the Connie Belin and Jaqueline N. Blank International Center for Gifted Education and Talent Development at The University of Iowa.

THE IOWA ACCELERATION SCALE

GENERAL INFORMATION

Student Name: Megan Date: Nov. 10

Date of Birth: October 11 Gender: F

School: Elementary Present Grade: 2

NAMES/POSITIONS OF INDIVIDUALS COMPLETING IAS:

Principal: Ms. K Parent (Guardian): Mrs. S.

Present Teacher(s): Ms. B Receiving Teacher(s): Ms. A

Other: M. D. (Media/TAG Specialist)

FAMILY INFORMATION:

Names and Occupations of Parents or Guardians Living in the Home:

Father—Not in the home

Mother—Medical Technologist

Names of Siblings:	Gender:	Age:	Grade in School:	Public/Private
Michael	M	5	K	Public

PRIOR SCHOOL EXPERIENCE:

	Name of School Attended	(Public/Private)	Approx. Size (less than 300; 300-600; 600-1000; more than 1000)
Pre-school			
Kindergarten	Megan has attended the same school since kindergarten	Public	300
Grade 1		"	"
Grade 2		"	"
Grade 3			
Grade 4			
Grade 5			
Grade 6			
Grade 7			
Grade 8			
Grade 9			

Figure 8.1 (*Continued*)

THE IOWA ACCELERATION SCALE

Has the student done any of the following? (check all that apply):

- ☐ Already skipped one grade
- ☐ Entered kindergarten or first grade early
- ☐ Accelerated in one or more subjects

If yes, explain:

Please comment regarding the success of the acceleration:

Which of the following standardized tests has the student taken? (mark all that apply)

- ☐ ITBS
- ☐ California Achievement Test
- ☐ Stanford
- ☒ Metropolitan
- ☒ Other: (please specify)

Attach copies of all test results available.

Has the student ever been given an evaluation by a psychologist, social worker, learning specialist? (Circle one)

Yes (No)

If yes, attach copies of all reports.

Does the student have a diagnosed learning or physical disability?

Yes (No)

If yes, please explain and give diagnostic information used to determine the disability:

Has the student ever received special educational services or been on medication?

Yes (No)

If yes, please explain.

Academic Ability and Achievement

Directions: For each item below circle the response that most often or best describes the student's *current* behavior or attitude.

Measure of Intelligence (IQ score)

Name of Test: _____

Average (100-114) 0
1 standard deviation above the mean (115-129) ..... (2)
2 standard deviations above the mean (130-144) 4
3 standard deviations (or more) above the mean (145-above) 7

If a score is unavailable, an individualized IQ test needs to be administered.

Comments: Cognitive Abilities Test–Grade 2
Verbal 90% ile
Quantitative 92% ile
Nonverbal 88% ile

NOTE: These are most likely an underestimate

Measure of Achievement

Name of Test: _____

Less than one full grade equivalent above 0
Grade equivalent of 1 to 1.5 years above 2
Grade equivalent of 1.5 to 2 years above ..... (4)
Grade equivalent of 2 years or more above 7

Comments:
Based upon results of the Woodcock Reading Mastery Tests
Note: decoding skills are higher than comprehension

Academic Ability and Achievement Subtotal: 6

If subtotal score < 4, acceleration is not recommended.

School Information

Grade Placement Under Consideration

Accelerate one grade within building ..... (1)
Early entrance to kindergarten or first grade 2
The acceleration will result in a change in building (e.g., elementary to next level) 2
The acceleration will result in a move to a new district 3

Comments:

2

Figure 8.1 (*Continued*)

THE IOWA ACCELERATION SCALE

Attendance at School

Has a history of unexcused absences and tardiness 0
Has a history of absences due to illness or for family issues 1
Absences and tardiness not a problem 2
Excellent attendance ..... (3)

Comments:

Physical Size

Smaller than students in present grade 1
About the same size as students in present grade 2
Larger than students in present grade ..... (3)

Comments:

Motor Coordination

Less coordinated than students in present grade 1
About as coordinated as students in present grade ..... (2)
More coordinated than students in present grade 3

Comments:

Age

Student is among the youngest in the present grade 1
Student is among the oldest in the present grade ..... (2)

Comments:

Participation in School Extracurricular Activities (e.g., athletics, clubs)

Student does not participate 0
Student has limited participation in activities ..... (1)
Student has extensive participation (i.e., two or more activities) 2
Student has a leadership role or has received wide recognition in one or more activities 3

Comments:
Activities not offered at this level

Motivation

Doesn't complete assignments and appears disinterested in schoolwork 0
Needs one-on-one encouragement to complete assignments 1
Completes those tasks that are of interest to him or her 2
Completes assignments and shows positive attitude 3
Completes assignments more quickly and more comprehensively than other classmates ..... (5)

Comments:

Attitude Towards Learning

Disinterested and/or frustrated when presented with new academic challenges 0
Completes assignments competently, but rarely seeks further challenges 1
Is enthusiastic and enjoys new challenges 2
Actively seeks and persists in new and rigorous academic challenges ..... (4)

Comments:

School Information
Subtotal: 21

Interpersonal Skills

Participation in Non-School Extracurricular Activities (e.g., religious groups, 4-H, scouts)

Student does not participate 0
Student has limited participation in activities ..... (1)
Student has extensive participation (i.e., two or more activities) 2
Student has a leadership role or has received wide recognition in one or more activities 3

Comments:

Relationships with Peers

Poor interpersonal skills and no friends 0
Prefers to be with younger children rather than same-aged children 0
Interpersonal skills are not as well-developed as age mates 1
Prefers to be with older children and/or adults rather than age-mates ..... (2)
Interpersonal skills are appropriate for age 3
Good interpersonal skills with age mates as well as students both older and younger 5

Comments:

Relationships with Teachers

Has poor interpersonal relationships with all teachers 0
Has poor interpersonal relationships with some teachers 1
Has very good relationships with one or two teachers ..... (2)
Has excellent relationships with most teachers 3

Comments:

3

Figure 8.1 (*Continued*)

THE IOWA ACCELERATION SCALE

Emotional Development

(of these categories, which is most like the student)

Exhibits a fairly strong pattern of emotional disturbances (e.g., depressed, inappropriate affect, aggressive behavior, etc.—see manual) 0
Very sensitive to criticism or remarks 1
Reacts aggressively towards criticism or remarks 1
Self-concept as a student is poor 1
Has an inflated ego about self and ability ..... (1)
Has a positive and realistic self-concept about personal and academic abilities 3

Comments:
NOTE: No comment from School

Behavior

Has had behavior problems that have led to contact with law enforcement 0
History of behavior problems in classroom, home, or community 0
Has occasional discipline problems ..... (1)
Has no history of discipline problems 3

Comments:
NOTE: This was not specified

Parent Involvement

Parents are overly involved in their child's progress and pressure the child 0
Parents are uninterested and uninvolved in their child's school progress .. 1
Parents are supportive and appropriately involved in their child's progress . 2
Parents are strongly committed to working with the school in meeting the child's academic needs ..... (3)

Comments:

Grade Placement of Siblings

Student would be accelerated into the same grade as an older sibling 0
Student presently has a sibling in the same grade 0
Sibling is one grade above or below the current grade 1
Sibling is two or more grades above or below the student's current grade (2)
Student has no siblings 3

Comments:

Interpersonal Skills Subtotal: 12

Attitude and Support

Student's Attitude Regarding Acceleration

Student does not want to be accelerated 0
Student is unsure about acceleration 1
Student is positive about acceleration ..... (2)
Student is enthusiastic about acceleration 3

Comments:

School System Support (Attitude)

Widespread nonsupport among school personnel 0
Educators most directly involved (e.g., teacher and principal receiving the student are not supportive) 0
Minimal or ambivalent support for acceleration 1
Enthusiastic support for acceleration ..... (1)

Comments:

Prior Planning for Acceleration

No planning or staff meetings have occurred 0
Limited staffing and information sharing regarding the student's placement 1
Extensive staffing and discussion regarding the student's placement .... (3)

Comments:

Attitude and Support Subtotal: 9

SubScale Totals

Academic Ability and Achievement Subtotal: 6
School Information Subtotal: 21
Interpersonal Skills Subtotal: 12
Attitude and Support Subtotal: 9
IAS Total: 48

Name & Position of Belin Center Consultant:
Susan Assouline, Associate Director

Signature of Belin Center Consultant:
Dr. Susan G. Assouline

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Figure 8.1 (*Continued*)

APPENDIX B

SURVEY OF ACCELERATION PRACTICES IN CENTRAL IOWA

Acceleration Practices in the Schools of Central Iowa

For the purpose of this survey, I will borrow a broad, yet simple definition, given by Paulus (1984), *in which acceleration is defined as "academic flexibility based on individual ability without regard* for age." The following acceleration strategies will be examined: early admission, early graduation from high school, grade skipping, compacted curriculum, acceleration in a single subject, continuously-paced progress (including non-graded schools), fast-paced courses, AP classes, and dual-enrollment.

I. GENERAL INFORMATION

A. Name of school district:

_____

B. Name and title of person completing the survey:

_____

C. TAG population and total population at each of the following levels in the school district:

TAG Elementary/Total Elementary _____/_____

TAG Middle School or Junior High / Total Junior High _____/_____

TAG Senior High/ Total Senior High _____/_____

D. Procedures used to identify gifted and talented students for special programming. Check all those that apply.

1. **Achievement tests** _____
2. **Teacher nomination** _____
3. **Parent nomination** _____
4. **IQ Tests** _____
5. **Grades** _____
6. **Self-nomination** _____
7. **Other** _____

II. ACCELERATION PRACTICES

A. Does the district allow for acceleration of students in some form? _____ **YES** _____ **NO**

B. Does the district have a written policy for acceleration? _____**YES** _____**NO**
(If so, please send a copy of this policy, if possible.)

C. Does the district have an implied, unwritten policy for acceleration? _____**YES** _____**NO**

D. Listed below are several forms of acceleration. In the blank, please put the number of students in the district who participated in each form of acceleration for each level during the 1996-97 school year. If the district does not employ a particular strategy, mark it N/A. If the district does use the strategy, but did not apply it to any students for the 1996-97 school year, mark it with a zero.

Elem.	Jr. Hi.	Sr. Hi.		
_____	_____	_____	1.	Early admission to kindergarten.
_____	_____	_____	2.	Early admission to first grade.
_____	_____	_____	3.	Early admission to middle school or junior high.
_____	_____	_____	4.	Early admission to high school.
_____	_____	_____	5.	Early graduation from high school.
_____	_____	_____	6.	Moderate grade skipping (one year in school career.)
_____	_____	_____	7.	Radical grade skipping (more than one year in school career.)
_____	_____	_____	8.	Compacted curriculum. (Student remains with age peers, moving through the same curriculum in the same sequence, but periodically tests out of known materials, using time saved to pursue advanced topics in that subject or another topic of student interest.)
_____	_____	_____	9.	Acceleration in a single subject.
_____	_____	____	10.	Continuously-paced progress or non-graded school. (Students progress through curricula at varied paces, moving ahead when they demonstrate readiness, regardless of grade-level.)
_____	_____	____	11.	Fast-paced courses. (Students complete 2 or more courses in a discipline in an abbreviated time span.)
_____	_____	____	12.	AP classes (Advanced Placement for the College Board.)
_____	_____	____	13.	Dual enrollment. (Students enroll in classes on 2 campuses at the same time such as junior and senior high or senior high and college.
_____	_____	____	14.	Other. (Please specify.)

E. List the criteria used in the district to determine that any or all of the above acceleration strategies should be employed. (i.e. IQ of 135+)

F. List any experiences with acceleration that did not have a positive outcome.

G. List any notable experiences with acceleration that occurred other than during the 1996-'97 school year.

PLEASE RETURN THE SURVEY BY MAY 15, 1998 IN THE SELF-ADDRESSED, STAMPED ENVELOPE. THANK YOU FOR YOUR TIME AND ASSISTANCE.

Check here if you would like a copy of the findings. _____

APPENDIX C

COVER LETTER

To: TAG Teacher/ Coordinator

From: Patricia Smith, TAG Teacher, K-8, Dallas Center-Grimes Community Schools, Dallas Center, Iowa

Date: April 30, 1998

I have been asked to formulate a district policy for academic acceleration by the administration of the Dallas Center-Grimes Community School District. In part, this project will also serve to help me complete the requirements for my masters degree in education of the gifted and talented from the University of Northern Iowa under the direction of Dr. William Waack. My intent is to gather information from teachers and coordinators of gifted and talented programs from neighboring school districts in Central Iowa and use the information obtained to develop a policy that will best suit the needs of students in the Dallas Center-Grimes school district.

Please complete the following two-page survey and return it to me by May 18, 1998 in the self-addressed, stamped envelope provided. You may, if you wish, also fax your response to me at 986-2109. If you have any questions, please feel free to contact me at **(515) 986-4057** (Dallas Center-Grimes Elementary School) or **(515) 986-9251** (Home: 200 N.W. Prairie Creek Dr., Grimes, IA 50111.) You may also contact me by E-mail at **psmith@dc-grimes.k12.ia.us**. Dr. Waack may be reached at U.N.I. at (319) 273-2265.

Thank you for sharing your expertise, experiences, and current district policies on the topic of acceleration. Your cooperation and assistance is greatly appreciated.

Sincerely,

Patricia Ann Smith

Patricia Ann Smith

APPENDIX D

CURRENT BOARD POLICY ON PROMOTION AND RETENTION

Educational Program — Major Area

600 — Series

Student Promotional and Retention — Subdivision

Policy Title Student Promotion and Retention — Code 605.3

Students will be promoted to the next grade level at the end of each school year based on the student's achievement, age, maturity, emotional stability, and social adjustment.

The retention of a student will be determined on the judgement of the certified staff and the principal. When it becomes evident a student in grades kindergarten through eight may be retained in a grade level for an additional year, the parents shall be informed. It shall be within the sole discretion of the board to retain students in their current grade level.

Students in grades nine through twelve will be informed of the required coursework necessary to graduate each year. When it becomes evident a student in these grades will be unable to meet the graduation requirements, the parents will be informed. It shall be within the sole discretion of the boards to deny graduation to a student.

It shall be the responsibility of the superintendent, in conjunction with the principal, to develop adminstrative regulations regarding this policy. In developing these administrative regulations, the procedures for promotion and retention shall be included.

Date of Adoption

May 1989

Legal Reference

Related Administration Rule or Regulation

APPENDIX E

REFERRAL FOR ACCELERATION

Dallas Center-Grimes Community School District
Referral for Acceleration

PART I

Student Information:

Student Name_____ Birthdate_____Age_____

Parent/Guardian_____

Address_____ Telephone_____

Referral By:_____

Acceleration Strategy Requested:_____

Current level of Classroom Performance:_____

_____

_____

Assessments:	Date	By
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

PART II

Interview:_____ _____ _____

_____

_____

Persons on Placement Committee:	Position:
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Additional Comments:_____

_____

Recommended
Placement:_____

Signatures:

_____	_____	_____	_____
Parent/Guardian	Date	Principal	Date
_____	_____	_____	_____
Parent/Guardian	Date	TAG Teacher/Coordinator	Date

APPENDIX F

MATHEMATICS ACCELERATION POLICY

Recommendations for Middle School Math Enrichment and Acceleration

1. Form a task force of teachers grades 5-7 to complete the following two tasks for each grade level.

   a. Develop enrichment activities for existing math curriculum to be made available to all math teachers.

   b. Develop an exit instrument to be used to determine to what extent a student meets the outcomes for the year's enriched curriculum.

2. Propose district-wide staff development in math to provide teachers with training needed to appropriately use enrichment activities with their students.

3. Develop guidelines for enrichment and acceleration.

   a. Adopt a philosophy that the needs of the majority of top math students can best be met by keeping them at grade level and providing an enriched curriculum.

   b. Develop a procedure for annually screening students to determine the need for math enrichment or acceleration. Those students needing enrichment will served by their regular math teachers. Additionally, teachers will be encouraged to open math enrichment opportunities to all interested students.

   c. Those students needing to be accelerated will be further tested and, based on those findings, counseled regarding options for acceleration. Possible options for acceleration include, but are not limited to, independent study overseen by a mentor and placement in a higher level math class. Students may choose to remain at grade level with an enriched curriculum.

   d. Suggested screening criteria include the following:

Enrichment:	ITBS Math Total at 90th percentile or above (Iowa norms) 80 % or better on grade level exit instrument for enriched curriculum
Acceleration:	ITBS Math Total at 99th percentile (Iowa norms) CAT Quantitative Battery at 99th percentile EXPLORE Math at 95th percentile or above compared to grade level participants 90% or better on grade level exit instrument for enriched curriculum Iowa Algebra Aptitude Test 90th percentile or above for acceleration into algebra

One qualifying acceleration score will alert the district to the need to obtain additional scores, but at least two qualifying scores will be required to be considered for acceleration.

Dallas Center-Grimes Junior High Algebra

In order to best serve the needs of the students with exceptional skills in the area of mathematics, in our district, algebra is offered at the junior high level. Students who meet the criteria and chose to take algebra while a junior high student are expected to complete an additional four years of math at the high school level. It is our expectation that only students who are striving to take advanced math classes including calculus during their junior and senior years should consider taking algebra during their junior high education. Students must meet the following criteria to be considered for placement in algebra:

Step 1: **Test Scores**	ITBS scores of 80th percentile (Iowa norms) for 7th graders ITBS scores of 90th percentile (Iowa norms) for 6th graders ITBS scores of 95th percentile (Iowa norms) for 5th graders Iowa Algebra Aptitude Test scores at 80th percentile with a combined minimum of 170 points for seventh graders, 180 points for 6th graders, and 185 points for 5th graders.
Step 2: **Math Rubric**	Those students who achieve the minimum test scores from above are evaluated by their math teachers using the math rubric for the assessment. Students must achieve a minimum of five with each criterion and a total score of at least 22 points. Students will be evaluated according to their current grades in both math and core courses, their life/work skills, their thinking and reasoning ability, and self-regulation.
Step 3: **Student and Parent Commitment**	Those students who successfully met the criteria in steps one and two must commit to the goal of five years of mathematics before graduating from Dallas Center-Grimes High School. This five years includes algebra taken in junior high. This commitment must be made no later than the first day of classes each school year.

APPENDIX G

MATHEMATICS ACCELERATION RUBRIC

MATHEMATICS ACCELERATION RUBRIC

Please evaluate each student in these areas, recording scores at the right.

CRITERIA	8-7	6-5	4-3	2-1	
Progress/Grading	Maintains an A average in mathematics and in total grade-point average.	Maintains an A average in mathematics and a B grade point for all other areas.	Maintains a B average in mathematics and at least a B for all other areas.	Maintains a B average mathematics and at least a C for all other areas.	score _____
Life/Work Skills	Independently uses technology, including computers/calculators; demonstrates excellent attendance; completes tasks with quality and on time; serves as mentor of others; is supportive of authority; accepts roles of leader and follower appropriately.	Uses technology, including computers/calculators appropriately with minimal direction; completes tasks on time; excellent attendance and follows make-up procedures; accepts and respects authority; works with others, appropriately.	With direction, uses technology, including computers/calculators completes most tasks on time: demonstrates good attendance; usually follows make-up procedures; accepts authority; usually works with others appropriately.	Uses technology only with direct instruction, including computers and calculators; does not complete tasks on time; demonstrates poor attendance; is inconsistent with make-up procedures; questions authority; has difficulty working with others appropriately.	score _____
Thinking/Reasoning	Generalizes from previous mathematics experience; experiments successfully with problem-solving techniques to create multiple solutions; elaborates on process or strategy used.	Demonstrates understanding of problem; uses appropriate problem-solving techniques; finds correct solutions; describes strategies used.	Shows appropriate use of numbers; attempts to use problem-solving techniques although has incorrect solutions shows some understanding of the problems; demonstrates random or weak explanation of strategies used.	Has limited awareness of the problems; problem-solving techniques do not connect to the problem; attempts to do the task without any strategy; demonstrates weak organization skills.	score _____
Self-Regulation	Sets and monitors goals; considers options before taking action; consistently demonstrates perseverance performs self-assessment to improve learning.	Sets and manages goals performs self-assessment: usually demonstrates perseverance; maintains healthy self-concept.	With direction from an instructor, sets goals; inconsistently performs self-assessment; inconsistently demonstrates perseverance Usually maintains healthy self-concept.	Provided structure, sets goals; unable to perform accurate self-assessment; does not follow through; lacks healthy self-concept.	score _____

total

APPENDIX H

REFERRAL AND PLACEMENT PROCESS FOR ACCELERATION

Referral and Placement Process for Acceleration

Dallas Center-Grimes Community School District