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Total School Cluster Grouping: Model, Research, and Practice

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Overview

Cluster grouping is a widely recommended and often used strategy for meeting the needs of high achieving students¹ in the regular elementary classroom. Its use has gained popularity in recent years because of the move toward inclusive education, budget cuts, and heterogeneous grouping policies that have eliminated programs for gifted students (Purcell, 1994; Renzulli, 2005; State of the States, 2005; Winebrenner, 2003). When viewed in the larger context of school reform and extending gifted education services to more students, cluster grouping can benefit teachers and students beyond those in traditional gifted programs.

Because cluster grouping places the highest achieving students in one classroom and affects the composition of all other classrooms, it affects all students and teachers in school. Therefore, cluster grouping should not be viewed as only a program for gifted students, but as a total school program. Through staff development, flexible placement, and grouping integrated with the regular school structure, cluster grouping offers a means for improving curriculum, instruction, and student achievement.

The benefits of cluster grouping include: WW

1. Challenging high achievers by placing them together in one classroom, while at the same time enabling students in other classrooms to become academic leaders, thus allowing new talent to emerge.
2. Increasing the ability of all teachers to meet the individual academic needs of their students by reducing the range of student achievement levels in all classrooms.
3. Improving how teachers view their students with respect to ability and achievement..
4. Improving student achievement among students from all achievement levels.
5. Increasing the number of students identified as high achievers; decreasing the number of

students identified as low achievers.

6. Extending gifted education services to more students in the school than simply those students identified as gifted and talented.
7. Bringing gifted education staff development, methods, and materials to all teachers in a school.
8. Providing full time placement and service for students identified as high achievers.
9. Providing a seamless fit with a continuum of gifted and talented services for students.
10. Helping teachers work together to plan effective curriculum and instruction for various levels of student achievement and readiness.
11. On-going assessment and identification of student strengths and abilities.
12. Offering students the opportunity to grow and develop and to receive services that match their current levels of achievement in various subjects.

Theoretical Underpinnings

In educational settings across the country, meeting the needs of high achieving students is a perpetual struggle. Staff, budget, and resource restraints frequently limit or exhaust the possibility of programming for the highest achievers. Further, identifying and serving gifted and potentially gifted students often takes a back seat to other educational reforms and priorities. Cluster grouping is a widely recommended and often used strategy for meeting the needs of high achieving, gifted, or high ability students¹ in the regular classroom (Balzer & Siwert, 1990; Brown, Archanbault, Zhang, & Westeberg, 1994; Coleman & Cross, 2005; Davis & Rimm, 2004; Hoover, Saylor, & Feldhusen, 1993; Kulik, 2003; LaRose, 1986; Renzulli, 1994; Rogers, 2002; Winebrenner, 2003). The use of cluster grouping has gained popularity in recent years due

¹ The terminology depends on the application of the program, thus in the research these terms are often used interchangeably.

to heterogeneous grouping policies and financial cutbacks that have eliminated special programs for gifted and talented students (Purcell, 1994; Renzulli, 2005; State of the States, 2005; Winebrenner, 2003).

Many variations in definitions and applications of cluster grouping have been noted but three non-negotiable components consistently prevail (Gentry, 1999). First, groups of students (varying in number from 3 to more than 10) identified as gifted, high achieving, or high ability are placed in classrooms with students of other achievement levels. Second, teachers differentiate curriculum and instruction for the high achieving students in the clustered classroom. Third, the successful teachers of the high ability students have a background and in working with gifted students. These three components drive the success of cluster grouping and serve as the foundational touchstones for this chapter. In order to understand the philosophical and structural nuances of cluster grouping, one first needs to consider definitions, history, research, misconceptions, and theoretical underpinnings of such programming.

Understanding Cluster Grouping in the Context of Ability Grouping

Cluster grouping is an organizational model that should be discussed in the broader context of ability grouping. Thousands of studies regarding the positive and negative effects of full time ability grouping exist. In the last decade and a half, nine analyses of full-time grouping have been compiled (Rogers, 2002). Conflicting results, conclusions, and opinions exist regarding ability grouping. Ability grouping has been touted both as an effective means for promoting student achievement and as an evil force contributing to the downfall of America's schools. However, the "real" answer lies somewhere in the middle and depends largely upon the application of the ability grouping. During this raging controversy, teachers are doing their best to meet students' individual needs within their classrooms. With the recent and emotional calls

for full-scale elimination of ability grouping, the advent of full inclusion, the addition of few resources, and increased class sizes, many teachers have found meeting the individual needs in the regular classroom nearly impossible. Study after study, analysis after analysis on the subject of ability grouping has yielded conflicting information on this complex topic. Yet, most researchers tend to agree that when teachers adjust their curriculum and instruction to the achievement and skill level of the child, students of all achievement levels benefit. This is the approach to achievement grouping that cluster grouping embraces.

Unfortunately, the issues and intricacies surrounding ability grouping have been continually relegated to one side of an ugly argument: Ability grouping is either “bad” or “good.” Neither could be further from the truth; thus the conflicting results. However, ability grouping is not an easily investigated topic, nor are answers easily found. This is due to the wide range of variables found in the school settings under which ability grouping should be studied if study is to yield meaningful results. Most teachers know that what goes on within the ability grouping makes it “good” or “bad.” The same can be said for whole group instruction, cooperative learning, the use of inclusion, or resource rooms.

Research on tracking has shown that students in higher tracks benefited from this placement, but students in the lower tracks did not (e.g. Slavin, 1987a). Conclusions were drawn that placing the students in the higher tracks caused the poor achievement of students in lower tracks (Oakes, 1985). Logically, one must question whether this is indeed possible. How could those students not present *cause* anything? Might other factors have “caused” the performance in both groups, such as the quality of the teachers, their expectations, or the curriculum? Opinions range from the belief that tracking is the cause of America’s failing schools (Oakes, 1985) to conclusions that, without ability grouping, both high and low ability students would be harmed

(Kulik, 2003). Renzulli and Reis (1991) explained an important delineation between tracking and ability grouping when they described tracking “as the general and usually permanent assignment of students to classes taught at a certain level,” and ability grouping as “a more flexible arrangement that takes into account factors *in addition* to ability, and sometimes in the place of ability” (p. 31). Even so, research regarding tracking has become generalized to include all forms of ability grouping, though the terms tracking and ability grouping are not synonymous (Tieso, 2003).

Grouping Terminology Definitions

Because terms surrounding grouping are often attributed with different, conflicting definitions, and definitions that overlap or carry emotional weight, the following definitions are provided to clarify terms used throughout this chapter.

General Cluster Grouping. Cluster grouping has a variety of definitions based on how it is implemented, but can generally be defined as placing several high achieving, high ability, or gifted students in a regular classroom with other students and a teacher who has received training or has a desire to differentiate curriculum and instruction for these “target” students (Gentry, 1999).

Total School Cluster Grouping (as applied by the school in the study referenced in this chapter). Total School Cluster Grouping takes General Cluster Grouping several steps further to consider the placement and performance of every student in the school together with the students who might traditionally be identified as gifted and for placement in the cluster classroom under the general model. Since cluster grouping affects the whole school, whether considered or not, the focus of this chapter will be on the application of total school cluster grouping which differs from general clustering in the following ways:

1. Identification occurs yearly on the basis of student performance, with the expectation that student achievement will increase as students grow, develop and respond to appropriately differentiated curriculum.
2. Identification encompasses low achieving to high achieving students, with all student achievement levels identified.
3. The classroom(s) that contain clusters of high achievers contain no above average achieving students, as these students are clustered into the other classrooms.
4. Some classrooms may contain clusters of special needs students with assistance provided to the classroom teacher.
5. Teacher may flexibly group between classes or among grade levels as well as use a variety of flexible grouping strategies within their classrooms.
6. All teachers receive in-service in gifted education strategies. The teacher whose class had the high achieving cluster was selected by his/her colleagues and provided differentiated instruction and curriculum to these students as needed to meet their educational needs

Ability Grouping. Students of similar ability are placed together in groups for the purpose of modification of pace, instruction, and curriculum to address the needs of individuals who have different abilities in different curricular areas (Tieso, 2003). Kulik (1992) warned that “benefits are slight from programs that group children by ability but prescribe common curricular experiences for all ability groups” (p. 21). Ability grouping can be done by subject, within classes or between classes, and for part of the day or throughout the day. In some applications of ability grouping compositions of the groups changes while in others it does not.

Achievement Grouping. Similar to ability grouping, achievement grouping focuses on demonstrated levels of achievement by students. Achievement is viewed as something dynamic and changing. Like ability grouping, achievement or skill level grouping can be done by subject, within or between classes, part of the day, or all day. It very often takes place in a flexible manner as performance and achievement levels of students change (Renzulli & Reis, 1997). Throughout this chapter we use achievement grouping rather than ability grouping due to its more fluid and manifest definition. Ability is often equated to intelligence and viewed as latent and fixed, whereas achievement is more likely to be viewed as changeable or to be affected by effective educational opportunities.

Between Class Grouping. This occurs when students are regrouped for a subject area (usually within an elementary grade level) based on ability or achievement. Teachers instruct students working at similar levels with appropriately challenging curricula, at an appropriate pace, and with methods most suited to facilitate academic gain. For example, in mathematics one teacher may be teaching algebra to advanced students, while a colleague teaches pre-algebra to students not so advanced, and yet another teacher works with students for whom math is a struggle, employing strategies to enhance their success and understanding. Between class grouping arrangements by subject areas usually require that grade level teachers teach the subject at the same time to facilitate the grouping arrangements.

Within Class Grouping. Within class grouping refers to different arrangements teachers use within their classes. Groups may be created by interest, skill, achievement, job, ability, self-selection – either heterogeneous or homogeneous – and can include various forms of cooperative learning grouping arrangements. Flexible arrangements for within class grouping are the goal.

Tracking. Tracking is full-time placement of students into ability groups for instruction – usually by class and at the secondary level. In a tracked system, there is very little opportunity to move between the various tracks and placement in the tracks is often determined by some form of “objective” testing. “[Tracking is] the practice of grouping students according to their perceived abilities...most noticeable or more commonly found in junior and senior high schools...the groups are sometimes labeled college bound, academic, vocational, general, and remedial” (McBrien & Brandt, 1997, pp. 97-98). Tracking has very little to do with ability or achievement grouping in elementary grades, although it has often been generalized to elementary school and used to discourage such practices with young children.

Flexible Grouping. Flexible grouping calls for use of various forms of grouping for instruction, pacing, and curriculum in such a manner to allow for movement of students between and among groups based on their progress and needs. Flexible grouping takes place when (a) there is more than one form of grouping used (class, project, job, skill, heterogeneous, homogeneous) and (b) group membership in some or all of these group changes according to the form of grouping used. When grouping is used, it is especially important that groups are formed and changed based on the academic needs of the students. Both critics and supporter of grouping agree that grouping should be flexible (Gentry, 1999; George, 1995; Renzulli & Reis, 1997; Slavin, 1987b).

Table 1. Grouping Terminology Summary

<i>Term</i>	<i>Definition</i>
Cluster Grouping	The placement of several high achieving, high ability, or gifted students in a regular classroom with other students and a teacher who has received training or has a desire to differentiate curriculum and instruction for these “target” students.
Total School Cluster	Cluster grouping model that takes into account the achievement levels of all students and places students in classrooms yearly in order to reduce the number

Grouping	of achievement levels in each classroom and facilitate teachers' differentiation of curriculum and instruction for all students and thus increase student achievement.
Ability Grouping	Students are grouped for the purpose of modification of pace, instruction, and curriculum. Groups can be flexible and arranged by subject, within classes, or between classes.
Achievement Grouping	Focuses on demonstrated levels of achievement by students and is viewed as something dynamic and changing. Groups can be arranged by subject, within classes, or between classes.
Between Class Grouping	Students are regrouped for a subject area (usually within an elementary grade level) based on ability or achievement. . Teachers instruct students working at similar levels with appropriately challenging curricula, at an appropriate pace, and with methods most suited to facilitate academic gain.
Within Class Grouping	These groups are different arrangements teachers use within their classes. Groups may be created by interest, skill, achievement, job, ability, self-selection – either heterogeneous or homogeneous – and can include various forms of cooperative learning grouping arrangements. Groups are intended to be flexible.
Tracking	The full-time placement of students into ability groups for instruction – usually by class and at the secondary level. Little opportunity exists to move between tracks.
Flexible Grouping	The use of various forms of grouping for instruction, pacing, and curriculum in such a manner to allow for movement of students between and among groups based on their progress and needs.

Ability Grouping Considerations

Slavin (1987b; 1990; 2006) listed three important advantages of regrouping for selected subjects over homogeneous ability grouped class assignments: (a) identification with students in the setting for most of the day reduces labeling effects, (b) achievement in reading or math determines group placement – not ability level, and (c) regrouping plans tend to be flexible. In their meta-analyses, Kulik and Kulik (1991) reported that within-class programs specifically designed to benefit gifted and talented students raised the achievement scores of these students.

Slavin (1987a) reported that within-class ability grouping had a positive effect (.34 standard deviations) on the mathematics achievements of all students, with the most positive effect for students who achieved at low levels. He also stated that the within-class use of grouping for reading instruction might be necessary. After reviewing the effects of 13 different research syntheses on grouping, Rogers (1991; 2002) concluded that grouping students on the basis of academic ability and on the basis of general intellectual ability has “produced marked academic achievement gains as well as moderate increases attitude toward the subjects in which these students are grouped” (1991; p. xii). Despite many arguments for and against ability grouping, it appears from reviews of the research that grouping can help to improve the academic performance of students of all achievement levels if implemented with appropriate curriculum, instruction, and expectations.

For grouping to positively affect the academic achievement of students, more than a simple administrative grouping plan must exist. As demonstrated by the varied results from the meta-analytic studies on grouping, there is more to grouping than simply assigning students to groups on the basis of their ability or achievement levels. The studies that reported the largest effects were of programs that provided differentiation within ability groups (Kulik, 1992, 2003; Rogers, 1991, 2002). Rogers (1991) suggested it was unlikely grouping itself caused the gains. Kulik (2003) noted that bright, average, and slow youngsters benefited from grouping programs if the curriculum was appropriately adjusted to the aptitude levels of the groups. Accordingly, he recommended schools use various forms of flexible ability grouping. In discussing their meta-analyses findings on grouping practices, Kulik and Kulik (1992) concluded:

If schools eliminated grouping programs with differentiated curricula, the damage to student achievement would be great, and it would be felt broadly. Both higher and lower

aptitude students would suffer academically from the elimination of such programs. The damage would be truly great if, in the name of de-tracking, schools eliminated enriched and accelerated classes for their brightest learners. The achievement level of such students would fall dramatically if they were required to move at the common pace. No one can be certain that there would be a way to repair the harm that would be done. (p. 73)

What the Research Says about Cluster Grouping

It is clear that a discrepancy exists between what takes place in schools for students with regard to challenge and instructional strategies and what should take place if American students are to compete in a global market place (Renzulli, 2005). Renzulli (1994) stated, “We know that all students learning improves when schools are perceived as being enjoyable, relevant, friendly places where students have some role...deciding what they will learn, and how they will pursue topics in which they may have a special interest” (pp. 20-21). Restricting the range of student achievement levels in classrooms, results in more time for teachers to work with individual students. Cluster grouping has been found to be beneficial to students in that it allows students of like achievement levels to work together and challenge each other. For high-ability learners cluster grouping also allows them the opportunity to not always be the best.

Researchers have noted benefits from grouping gifted students. These benefits include academic achievement (Gentry, 1999; Tieso, 2005), realistic perception of abilities when compared to peers (Marsh, Chessor, Craven, & Roche, 1995), appropriate levels of challenge (Kulik, 2003; Rogers, 2002), ability for teacher to address unique social and emotional needs of gifted students (Peterson, 2003), and the ability of the teacher to better address individual

strengths and weakness with a more focused range of ability levels (Moon, 2003). Cluster grouping can offer these and other benefits to students and their teachers.

Research indicates that there are several major benefits of cluster grouping:

1. gifted students regularly interact with their intellectual peers and age peers (Delacourt & Evans, 1994; Rogers, 1991; Slavin, 1987a);
2. cluster grouping provides full-time services for gifted students without additional cost (Gentry & Owen, 1999; Hoover et al., 1993; LaRose, 1986);
3. curricular differentiation is more efficient and likely to occur when a group of high-achieving students is placed with a teacher who has expertise, training, and a desire to differentiate curriculum than when these students are distributed among many teachers (Bryant, 1987; Kennedy, 1995; Kulik, 1992; Rogers, 2002);
4. removing the highest achievers from most classrooms allows other achievers to emerge (Gentry & Owen, 1999; Kennedy, 1989);
5. student achievement increases when cluster grouping is used (Brulles, 2005; Gentry & Owen, 1999);
6. over time, fewer students are identified as low achievers and more students are identified as high achievers (Gentry, 1999);
7. and, finally, cluster grouping reduces the range of student achievement levels that must be addressed within the classrooms of all teachers (Coleman, 1995; Gentry, 1999; Delacourt & Evans 1994; Rogers, 1993).

Several analysis of studies regarding ability grouping in elementary schools have been completed (Kulik, 1992; Kulik & Kulik, 1984, 1985, 1992; Lou, Abrami, Spence, Poulsen,

Chambers, & d' Apollonia, 1996; Rogers, 1991; Slavin, 1987a); however, only ten published studies could be found that examined the effects of ability grouping on gifted students in schools where a cluster grouping model was used (Delcourt & Evan, 1994; Delcourt, Lloyd, Cornell, & Goldberg, 1994; Gentry, 1999; Gentry & Owen, 1999; Hoover, Saylor, & Feldhusen, 1993; Ivey, 1965; LaRose, 1986; Long 1957; Ziehl, 1962). Eight of these studies were concerned with the effects of cluster grouping on gifted students, and only our work examined effects on students of other achievement levels.

Although cluster grouping is commonly suggested as a programming option for gifted students, surprisingly little evidence exists regarding its effects on these students, and only one study examined the effects of cluster grouping on all students and on teachers' perceptions of other students' performance (Gentry & Owen, 1999). Gentry (1999) and Gentry & Owen (1999) reported that, for two entire classes of students when compared to similar students in a longitudinal, quasi-experimental study, student achievement increased among students in the cluster grouped school. Standardized achievement scores in math, reading and on total battery on the Iowa Tests of Basic Skills (Hieronymus, Hoover, & Lindquist, 1984) improved for two entire graduation years between grades 2 and 5. Further the cluster grouped students began with lower total achievement than their comparison school counter parts in for each graduation year of students, and ended with significantly higher total achievement than the comparison school students. The gains in achievement were both statistically and practically significant with medium to large effect sizes. Additionally, more students in the treatment school were identified as above average or high achievers while fewer students were identified as low achievers during the 5-year span of the study. Gentry also reported qualitative findings concerning teacher

practices, administrative leadership, and the various uses of grouping that helped to explain the achievement and identification findings.

Since this research was published, this model has been widely recommended and implemented, but most districts show little interest in publishing the results of their efforts, hence only anecdotal information exists concerning the efficacy of implementation in these varied sites (e.g., Teno, 2000). However, this study has been replicated with similar findings reported in dissertation format (Brulles, 2005) and is currently being replicated in a longitudinal study in Indiana. The total school cluster grouping model that we studied in the mid 1990's and that we are currently replicating serves as the conceptual basis for the remainder of this chapter.

Total School Cluster Grouping

Total School Cluster Grouping operates on the premise that the gifted education program will enhance the entire school. As noted by Tomlinson and Callahan (1992), Renzulli (1994), Reis, Gentry, and Park (1995), and the U.S. Department of Education (1993), the use of gifted education "know-how" has the potential to improve general education practices. The long-term study conducted by Gubbins and NRC/GT Research Team (2002) found by employing strategies typically used in gifted programs, academic needs were more likely to become the focus of the curriculum than the typical themed units (watermelons, apples, pumpkins) that had previously presided in many classrooms. Cluster grouping, when designed appropriately, can simultaneously address the needs of high-achieving students *and* the needs of other students.

The professional development component of this model had positive effects not only on the students, but the teachers felt that they received both the instructional and collegial support that allowed them to become leaders in their schools (Gentry & Keilty, 2004). Due to the total school effects of cluster grouping, professional development plays a critical role in the model's

success. Through the on-going staff development teachers are afforded the opportunity to explore instructional strategies that can be used successfully in cluster grouped classrooms. Through integrating higher order thinking skills, developing critical thinking skills, compacting curriculum, using open-ended questions, accelerating students in content areas and by using and several other instructional strategies teachers reported being able to address the specific needs of their students (Gentry & Owen, 1999). According to Teacher 3A:

We had so many high math students who weren't in a high cluster, we thought, to really meet the needs of the grade level, we would have a cluster group strictly for math. We also had the high cluster reading group to meet the needs of other children who may not have been identified or who had strengths that weren't evident across the board. We were able to target more children for high reading by regrouping within the grade level for reading. (p. 234).

The focus on the individual abilities and needs of students in the cluster groups provided more opportunities to identify students at higher levels. For example, Teacher 4C explained:

Maybe cluster grouping has a lot to do with it. The cluster grouping may give the lower achieving students more self-confidence, because I think they become more involved in class when the high [achieving] kids are removed. And you know that those high kids are competitive and tend to dominate class sometimes. Also, the average student or high-average student really blossomed, too, which may be due to cluster grouping. (Gentry & Owen, 1999, pp.228-229)

Kulik and Kulik (1992) and Rogers (1991) suggested that grouping by ability, when used in conjunction with appropriate differentiated instruction, can be beneficial to student achievement. When placed together, gifted students are given the opportunity to see the level at

which their academic peers are performing. While in heterogeneous groups, these students may be able to perform at a sub-par level and still be seen as excelling beyond their classmates, when in truth, they are capable of so much more (Kulik, 2003; Rogers 2002). Therefore by grouping more homogenously, the façade of effort and ability can be removed and replaced with more appropriate challenge and rigor.

In turn, the same phenomenon occurs in the other classrooms. Students who previously sat quietly, able to avoid participation are now required to contribute to the learning process. As the expectation is raised for all students, accountability increases, attention focuses, and productivity begins to rise. By regrouping the student population according to achievement levels, schools are better able to meet both the diverse needs of the students and the non-negotiable restrictions of the budget (Gentry, 1999).

Administrators and teachers noted the merit of total school cluster grouping, as it procured positive results for both teachers and students. The teachers liked the program, and 95% believed it helped them better meet the needs of the students in their classrooms (Gentry, 1999).

One teacher explained how she came to view the program:

One thing - I remember how skeptical I was at the beginning because I am not a risk-taker. I thought the same thing a few other people thought – oh, you take those top kids out and I'm not going to have any spark. And that was far from being true. I see lots of sparks in my room.... and having my daughter in [the program] ... there's such a difference in her attitude and her love for school is back...before being placed in the high-achieving cluster, she wasn't being challenged in school, now to see her doing research projects as an eight-year-old...she's doing projects so beyond what I ever thought and she is so excited about school. (p. 238)

Total School Cluster Grouping: The Model

The Total School Cluster Grouping Model implements an organizational model that places students into classrooms on the basis of achievement, flexibly groups and regroups students as needed for instruction (based on interests and needs), and provides appropriately challenging learning experiences for all students. The following paragraphs outline steps and details for successful implementation of a Total School Cluster Grouping Model.

Step 1: Identification

Categories of Achievement. Identification in a traditional gifted program can be fraught with problems of accountability, testing, elitism, exclusionism, equity, and limited space in the program. These things do not pose problems in the Total School Cluster Grouping Model as the achievement levels of *all* students are identified. This is done using a combination of student performance in the classroom as identified by their teachers and achievement testing results. In this model a set number or percentage of students to identify for gifted services does not exist, rather *all* students are identified, yearly, based on their performance using 5 categories of performance defined as follows:

1. *High Achieving:* These students are great at math *and* reading when compared to their age peers.
2. *Above Average:* These students are great at math *or* reading, or they are pretty good at math and reading, but not as advanced as the high achievers.
3. *Average:* These students achieve in the middle when compared to others in their grade level. This might be “on grade level” in many schools, but in an impoverished area, they might be achieving below grade level, but at an average level for the school population.

4. *Low Average*: These students may struggle with math or reading, be slightly behind their peers, but they also appear that with some support of work that they are not at risk of failure.
5. *Low*: These students struggle with school. In many schools the longer they attend the further behind they fall, and the more at-risk of failure they become. They are the students for whom school seems to fail.
6. *Special Education*: These are the special needs students, however they are already identified so placement becomes the only concern. Identification is a key component for all programming, and cluster grouping in particular. This program includes flexible identification, placement of students conducted on a yearly basis, plus flexible grouping and regrouping of students for instruction once they are placed in classrooms.

Teachers and administration need to understand these identification category definitions and that the categories are based on the population attending their school. By using a local frame of reference, the system of identification can work in any type of school. If a school is “average” (is there such a school?), then an average student would be on grade level, whereas if a school is high performing an average student might be achieving above grade level. These categories are relative performance. The Scales for Rating the Behavioral Characteristics of Superior Students (Renzulli et al., 2002) might assist teachers in understanding characteristics of academically high performing students, though the ratings should never be summed and used in an identification matrix. It is also important to understand that:

1. identification categories are designated to assist with placement of students into classrooms in this model

2. categories change as students grow, learn and develop; so that a specific identification category might not drive instructional placement for students identified in average though low categories
3. identification takes place yearly for classroom placement, and students will improve as they progress through school.

Identification. Once definitional categories are established and explained, the process of identifying the achievement levels of the students for placement in classrooms can begin. This process is labor intensive and involves several steps. First, we try to have the teachers identify the performance of their students prior to them examining any test performance data on the students. This is important as both the teacher designations and the test performance will be used to identify and place students in the classrooms. If teachers check the tests to see if they are “right,” then adjust their assessments of student achievement based on test results, the information used for placement will have too much test emphasis rather than a balance of information from both teachers and test results. This model uses tests for means of *inclusion* into the program, not for means of *exclusion* from the program as do so many other identification systems. Teachers will identify students who fail to test well, but who perform well. Teachers, in general, know their students well. Occasionally, teachers will fail to identify as gifted (or high achieving) students who fail to do their work, who are unorganized, or who are defiant. There are many reasons for this, not the least of which is that such a child might take a spot away from a more deserving child. In this model there is no limit to the number of spaces in the high achieving cluster. If a child scores well on the test, but not in class, he/she will be placed in the high achieving cluster by merit of his scores, thus the test is used to *include* students who the teachers might not identify for placement. We suggest using a local norm of 90th or 95th

percentile in both math and reading for automatic inclusion into the high achieving cluster. Other high achievers will be so designated by their teachers regardless of their test scores. In the event of a teacher who over-nominates, have that teacher rank the nominated students in order of most need.

By using both teacher ratings and achievement scores, a system of checks and balances is developed. Through this method it is possible for a student who didn't test well to be identified as conversely, a student whose classroom performance did not reflect his/her ability could be identified as *high achieving* or *above average* on the basis of achievement scores. Due to the holistic approach and flexible nature of this identification process, cut-off scores should not be employed. The use of cut-off scores may cause educators to misidentify students by placing too much emphasis on one factor. The students are simply identified and placed into classes by people know them best and have their best interests in mind.

Other considerations. When teachers designate the achievement levels of their students, so too, should they designate which students need to be separated, which students have behavior problems, and who receives special assistance in areas such as math, reading, language, speech, etc. Principals might consider sending information home to explain the program to parents. If parent requests are honored, it needs to be made clear, for reasons forthcoming, that placement into the classroom with a cluster of high achieving student might not be possible.

Step Two: Developing Class Lists

The information gathered in Step 1, Identification, is used to develop a draft of class lists for the following school year. Some places have used index or sticky cards with all the information on each student included on the card. This facilitates moving students around until a final placement is achieved. Other schools have computerized the information, and still other

educators simply work from a class list format using good old-fashioned paper. Whatever the method, in developing class lists, the goals include:

1. reducing the number of achievement groups that each teacher has in his/her classroom while maintaining some heterogeneity
2. placing a group of *above average* students in every teacher's classroom,
3. clustering the *high achieving* students in one classroom,
4. clustering the students needing special services as appropriate in classrooms with resource personnel assistance,
5. honoring parental requests for specific teachers when possible and if this follows building or district policy,
6. evenly distributing behavior problems among all classrooms so that no teacher has more than his/her fair share of difficult students,
7. involving the teachers in developing the class lists.

By employing these goals, placement of students into draft classrooms can begin. An administrator, secretary, counselor, or coordinator can develop the draft class lists. Once the drafts are completed, the current grade level teachers and administrator or coordinator should sit down and review the lists with the above goals in mind to complete placement for next year's teachers. During this placement conference, which can initially take an hour or two, the teachers (who know both their colleagues and their students) should review the lists for appropriateness. Teachers should feel free to suggest and to make student placement changes. The only rule concerning moving students is that like-labeled students must be "traded" among the classrooms. For example, an average student from classroom A might be traded for an average student from classroom B due to an issue of better teacher-fit or teaching style for a particular student's needs.

Once all the changes have been made the lists can be finalized. We recommend using an asterisk to designate any students who are placed in a classroom for a specific reason. This asterisk denotes that these students may not be moved and will cut down on changes made to the lists after they have been finalized.

By using these procedures for placing students into classrooms each year, the goals for developing the classes can be met. Table 2 depicts how the placement might have looked for a particular grade level. Please keep in mind that the number of high achievers will vary from year to year. Since this is a total school model, it can accommodate any number of high achievers and the model’s goal is to produce more students who achieve at higher levels over time.

Table 2. Classroom Breakdown of a Grade Level Structure - Example

ID Category	3 rd grade Clsrm 1	3 rd grade Clsrm 2	3 rd grade Clsrm 3	3 rd grade Clsrm 4	3 rd grade Clsrm 5	3 rd grade Total grade
High Achieving	11	0	0	0	0	11
Above Average	0	7	7	7	7	28
Average	8	8	8	8	8	40
Low Average	3	4	2	5	6	20
Low	0	6	6	6	0	18
Sp. Educ.	2*	0	2	2	4**	10
Total	25	25	25	25	25	125

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*note. These students are Learning Disabled *and* Gifted.

**note. These students are LD and see the same teacher consultant who spends 4 half days per week working in this classroom

As displayed in Table 2, the range of ability levels has been significantly reduced from what one would be likely to find in a typical heterogeneous classroom that was computer generated or in a classroom in which the students were distributed evenly in order to be “fair” to the teachers. In this model, we recognize that having a similar number of different types of

students in classrooms is not fair, in that it creates too wide of a range of achievement levels for teachers to effectively teach and reach the diverse needs of their individual students. The reduction in range of achievement levels allows for a more focused and academically appropriate curricular approach, and thus increases the chances that individual students' academic needs will be met.

As noted in the Table 2, a cluster of students with learning disabilities exists in one classroom, but with assistance to the classroom teacher. This manner of inclusion brings the special education teacher into the classroom, thus integrating her into the general education classroom. The students who receive special services, are in effect, clustered as well, and this affords them a peer group, rather than singling them out as the only kid in class who is different and who receives special services. In turn, the special education teacher is a master of differentiation and can help ensure that methods and materials are appropriate for varied students.

Step Three: Launching the Model

The identification and placement of students is an important and time-consuming task. However, it is what takes place after the placement that really makes the model successful. By grouping students in clusters, classrooms are organized to meet students' individual needs. The strategies teachers use to challenge and meet their students' needs are integral for student growth and true model implementation.

Coordination with other services. Because cluster grouping involves strategic placement of students with varying skills into classrooms, it works well with a variety of other gifted programs and services, many discussed in other chapters of this book. For example, in any gifted program that requires a pull-out or send-out component, students who comprise a high achieving

cluster can be sent to the gifted resource teacher and only disrupt a few classrooms. A traditional pull-out application involves many teachers and classrooms, making it difficult to schedule and coordinate and thus, involves, varying levels of support and buy-in from different classroom teachers. When the high achieving cluster students are pulled-out from a clustered classroom on a regular basis, the teacher of this classroom expects students to leave for services, supports the delivery of these services, and plans for instruction with the rest of the class during the pull-out time. Additionally, pull-out services are part time, often as little as an hour a week. Cluster grouping offers full-time services to students during the rest of their school experience, and thus complements pull-out services with intensive, regular services. Similar support and scheduling exists for students who receive other special services when they are placed in clusters in this total school model. Cluster grouping coordinates well with the Triad Model, the Purdue Three Stage Model, and even with self-contained program or special school program options by offering another tier of services for students who may not initially qualify for the self-contained classroom.

The Triad Model (see Renzulli & Reis, Chapter XX) involves a component where students revolve into the program for in-depth pursuit of Type III investigations and for intensive training in methodological skills. While this model employs a revolving door and can involve a variety of students, those students who have been identified as high-achieving in the total school cluster grouping model, will likely require services in the Triad model. Such is the case in the Purdue Three Stage Model (See Moon & ??, Chapter XX), in which gifted and talented students pursue advanced academics by moving through three stages of more intense study with a final project as an outcome. Both of these programs involve a pull-out component that would assist

the teacher of the high achieving cluster students with delivery of advanced services to his/her students.

Some districts implement self-contained classes of gifted and talented students or send such students to a magnet school setting. While such applications of gifted programming have merit and have been shown in the literature to benefit the gifted students whom they serve, academically, socially, and emotionally, these programs have as a downside a limitation of exclusivity concerning which students “get in” to the program. This limitation also often precludes the addition of new students during the program. If a district only offers a program in which a limited number of students can receive services in special classes or special schools, it runs the risk of missing students from impoverished backgrounds and students from cultural groups who continue to experience severe underrepresentation in gifted programs (United States Department of Education, 2000; Miller 2004). In short, programs that are limited by the number of spaces in a given school or classroom will miss students who would benefit from gifted and talented services. Fortunately, programs do not have to be limited to a one-size-fits-all approach with only a limited number of options. Implementation of cluster grouping can work in conjunction with magnet schools and self-contained classrooms; thus extending services to more students, involving more teachers, and ultimately developing more talents among students.

Finally, when considering implementing cluster-grouping and how it can work with existing or potential services, district personnel should note how this total school model can supplement their existing efforts and bring services to more students, schools, and teachers. Implementing total school cluster grouping should never be used as rationale to eliminate other viable services available or potentially available to students. It is only through a continuum of special services that student talents can effectively be developed. Total school cluster grouping

offers districts a method of placing students in classrooms in a manner that can help teachers better meet their academic needs and help all of their students achieve at higher levels. Cluster grouping done in conjunction with other services simply makes sense.

Teacher Selection and Appointment. One perceived challenge in the initial implementation of a total school cluster grouping program might involve which teachers teach which classrooms of students. In examining the methods of the school from our study and in the practices of other schools that have implemented cluster grouping we have recognized some basic “truths” concerning how to select and appoint teachers to teach the high achieving (and other) cluster classrooms.

First, the teacher of the high achieving classroom must want to work with these students and he/she must commit to differentiating curriculum and providing these students with appropriately challenging curriculum and instruction. Second, this individual must commit to learning about how to work with these students through coursework, workshops, licensure, or degree programs. Third, if selected to teach this classroom, the appointment is not a lifetime appointment; however, it will last for a minimum of 3 years. At the end of 3 years the appointment will be revisited in the context of the grade level and to consider whether other teachers have interest in working with the high achieving students.

In this model, if all goes well, more students will be identified each year as talented; thus the demand for teachers to work with high achieving students will increase over time. Further, in districts that implement the between-class grouping, discussed earlier in this chapter, teachers who have desire and skills to teach high achievers in the cluster, high achieving math groups, and high achieving reading groups will be needed. The high achieving cluster teacher need not also teach both advanced math and advanced reading.

We suggest setting some parameters and application process for initially designating teachers who will teach the high achieving cluster classroom that include, knowledge and background; experience and skills; and willingness to engage in additional education concerning gifted child education. We also suggest that grade level teachers sit together and discuss openly who is interested in teaching this classroom. Often the grade level individuals, working together, can and will make the designation. If they do, such a discussion can avoid the appearance of special treatment or questions surrounding the process of who was selected and why he/she was selected to teach this classroom. Buy-in to the assignment by one's colleagues increases the chances for success and reduces misperceptions and jealousy.

Professional Development. In addition to understanding how to identify and place students in the model, a thoughtful and comprehensive staff development plan can lend needed support to enhance the success of the model. The importance of such conversations cannot be overemphasized. One only has to look at the “mission statements” posted in nearly every school across the country, then examine practices that run contrary to the stated missions, to realize that without dialogue and buy-in, program changes are not likely to matter (Fullan, 2006; Senge, 1991).

The topic of professional development is extensive and integral to the success of any program; thus when implementing total school cluster grouping must be carefully considered from the beginning phases of implementation through advanced program development and refinement. Gentry & Keilty (2004) discussed implementation of professional development associated with two different applications of cluster grouping—from program start-up to program maintenance. Key findings included the importance of initial discussions to develop vision and buy in among staff. These discussions were followed by initial staff development

concerning the how and the why of the program and the details about how to implement identification and set up the classrooms. In this phase of staff development, research and effective practices became an important underpinning of the program development. In the research implementation site, staff development initiatives often originated from teachers' requests or questions. In other words, once the program begins; asking the teachers what they need in terms of professional development can be a responsive method of helping ensure their successes.

We also found that having a teacher who was an expert in gifted child education served as a resource for other teachers in the building, with teachers admitting that they turned to her. As one teacher explained, "I've learned so much from [colleague], and I adapt many of the strategies that she uses with her high achievers and use them with my LD and low achievers. I don't think gifted education is just for gifted students." (Gentry & Owen, 1999, p. 238). We recognized and recommended that all gifted education staff development be open to all teachers, whether they were directly responsible for high achieving students or not. We found that as a result, all teachers in the study site had participated in some staff development in gifted child education.

A benefit of offering professional development to all teachers in our study was that all teachers used some gifted education strategies, reflecting what Ward (1981, p. 76) termed "a radiation of excellence." This radiation of excellence, we believe, resulted from having a gifted program in the school and encouraging access to the staff development associated with this program. Finally, Gentry and Keilty (2004) recommended several steps to maintain and grow the program including evaluation, research, and reflective practices that consider the achievement and growth of all students in the school.

Because the Total School Cluster Grouping Model fit seamlessly with the work of Renzulli and Reis, all teachers involved in the cluster grouping study were provided with a general overview of gifted education and talent development based on the three-ring conception of giftedness (Renzulli, 1978) and the Enrichment Triad Model (Renzulli, 1977; Renzulli & Reis, 1997). The three-ring conception of giftedness views giftedness as a behavior that results from the interaction of three traits: above average ability, task commitment, and creativity. When the three traits interact and are brought to bear upon a specific human endeavor, gifted behavior occurs. Renzulli believes that gifted behaviors can be developed in students who are given appropriate opportunities to develop their strengths and interests. He proposed the Enrichment Triad Model as a means for developing talent in more students. In this model, three types of enrichment activities are provided for students, and there is an interaction among these types of enrichment. Type I Enrichment consists of exploratory activities designed to expose students to a variety of topics and areas of study not ordinarily covered in the regular curriculum. Type II Enrichment consists of group training in thinking and feeling processes; learning-how-to-learn skills; research and reference skills; and written, oral, and visual communication skills. Type III Enrichment consists of first-hand investigations of real problems. The Enrichment Triad Model is based on ways in which people learn in a natural environment, rather than the artificially structured environment that characterizes most classrooms.

Classroom Practices. Teachers in the cluster grouping study (Gentry, 1999) used a variety of strategies to meet the needs of individual students in their classrooms. Teachers who had clusters of high achievers used all of the following strategies. However, most noteworthy was that other teachers also used these strategies. In this manner, the types of curriculum, instruction, and strategies that might most often be reserved just for students in a gifted program

permeated the school in the cluster grouping study, and likely led to the increase in student achievement. Specifically, in our study site, we found teachers

1. Integrating higher order thinking skills
2. Developing critical thinking
3. Teaching students to use creative thinking skills and think divergently
4. Integrating problem solving
5. Assigning projects
6. Using acceleration
7. Adjusting assignments based on student skills
8. Grouping students so they could spend time with like ability peers
9. Developing and implementing curricular extensions to challenge their students
10. Providing students with choices of partners or groups
11. Providing students choices to work alone or together
12. Using open-ended questioning
13. Offering students independent study options
14. Using challenging questions
15. Implementing curriculum compacting
16. Providing students choices of problems and assignments
17. Providing enrichment experiences to students
18. Having high expectations for student achievement

The strategies are only as successful as the person implementing them. Not all teachers used all strategies, which underscores that fact that teachers are as different from each other as are their students. Included in the discussion concerning differentiation needs to be the

discussion of differentiation for teachers concerning methods, materials, and styles. For this reason, the above strategies are intended to be a menu from which teachers might choose to improve their instructional repertoire. The nature of the cluster grouping model demands that various things are taking place in a classroom simultaneously. The role of the teacher requires facilitation, mediation, implementation, and inspiration. For the greatest successes with the students in these classrooms, there must be a positive environment and high, yet realistic teacher expectations (Gentry, 1999).

The cluster teachers plan activities of a progressively challenging nature. These learning activities may be considered “instead of” rather than “in addition to” the regular curriculum. We suggest to teachers that it can be interpreted as not “more of the same” but something “instead.” For example, instead of answering a number of low-level comprehension questions at the end of a story the student may be asked to describe the story’s theme and analyze how it could apply to his/her own life. In another situation, cluster teachers may pretest their students on the content of the math unit to be covered during the next two weeks. Students who demonstrate mastery of that content on the pretest might then be directed towards an independent research study facilitated by a teacher. In some classrooms the teacher may design a lesson with sufficient depth and breadth to challenge all of his/her students. In some cases students might be accelerated through a portion of the curriculum. In other situations, teachers may decide to provide an enrichment unit that extends the learning into higher levels and newer horizons. These strategies may be used in any subject area with just the cluster students, a mixture of cluster students and other students, or the whole class. The plans may be shared with other teachers (Gentry & Keilty, 2004, p. 154).

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The Use of Grouping. The teachers in the study also used a variety of grouping strategies. The reason to cluster group or to use any grouping is to facilitate learning. Achievement grouping allows for the adjustment of curricula based on the skill level of the student and other forms of grouping are equally effective tools to enhance student learning. Teachers in our study used the following forms of grouping in their efforts to help students achieve:

- Between-class groups, which included regrouping by achievement levels for reading and math 4 to 5 days per week. In this manner for these two subjects, one teacher taught the advanced students, another teacher taught the struggling students and the remaining teachers taught the average students using appropriately leveled materials that were high quality and interesting to the students at each level.
- Within-class groups, which included grouping students by interest, in cooperative learning groups, as peer tutoring diads, and by achievement levels in subjects other than math and reading as those subjects were addressed in the between class arrangements,

Key to both the within-class and between-class configurations of grouping was flexibility in the groups. As students gained in skills in the between class arrangements, they were moved to higher skill groups, with some students being moved to higher grades. Whereas, a cluster grouped classroom of high achieving students might have had 10 students who excelled in both math and reading, the high achieving reading section had 24 students who excelled in reading. Adding 14 new students with strengths in reading created flexibility in the reading groups, while simultaneously providing advanced reading curriculum to advanced readers. The same was true for math instruction. Regrouping for instruction facilitated the addition of students who excelled in math or reading into the core of high achievers who excelled in both subjects. Within the classes, grouping strategies used by the teachers was also flexible. Cooperative

learning was used in both homogeneous and heterogeneous applications, and students in these classes worked with a variety of their classmates on a variety of schoolwork.

Role of the Teacher

It can be realistically said that any educational model is only as strong as the teacher that implements it. Cluster grouping provides an educational model that provides students with appropriate academic peers in a somewhat heterogeneous setting. When teachers keep the following elements in practice, cluster grouping can yield impressive results.

1. Foster and maintain a positive classroom environment.

Kids are observant beings. If a positive classroom environment is not orchestrated from the onset of the school year, students may recognize and promote differences in ability rather than acknowledge and embrace them. When teachers work to adjust assignments, help students to be successful, and create classrooms where students want to be, successful results are probable (Gentry, 1999).

2. Possess high, yet realistic expectations of all students.

Students often only perform as much as they are expected to. Therefore by maintaining high, yet realistic expectations students are more likely to reach their full potential. A focus on both long-term process and incremental success along the way not only help to encourage students, but also provide them with an inherent sense of progress that is likely to follow beyond that specific classroom.

3. Implement strategies for challenging students and meeting students' needs in the cluster-grouped classroom.

What is good for gifted students may be beneficial for other students. However, the converse does not necessarily hold true. It is imperative that educators use foundational strategies

that have proven successful in challenging gifted students. Each body of students, and in truth each individual student, possesses specific needs. This holds true for gifted students as well. A wealth of research exists in regard to strategies that work for this population and should be monopolized within cluster grouping programs.

4. *Participate in on-going professional development opportunities.*

There is always more to be learned in regard to good classroom practice and curricular development regardless of level of experience in the field of education. Professional development can come in a variety of forms; from a more formal in-service to regularly scheduled, focused conversations between colleagues. The regularity of such self-advancement is an essential piece in regard to meeting the needs of all of your learners.

Data Collection and Evaluation. Districts that take the time, effort, and energy to implement a Total School Cluster Grouping model should not do so without a plan to evaluate the effects and efficacy of the program. Most districts gather data on an annual basis, so evaluation need not be an additional burden, but rather it can be a planned use of existing data and efforts. To fully understand the program effects on all students, data from all students, not just those deemed as gifted or high achieving, must be examined. We recommend maintaining records of identification categories to help understand if the program results in more students being identified as achieving at higher levels and fewer students being identified at lower levels. The identification data coupled with district achievement scores can provide an informative picture of how the program functions. Comparing these data with baseline data or data from a school in the district not using cluster grouping can provide more insights into the actual effects of cluster grouping. Identification data, achievement data examined together with classroom

practices and school climate data can provide a comprehensive program evaluation from which adjustments can be made.

Implementation Considerations

As with any educational program, a model is only as strong as its theoretical underpinnings, research basis, and as the people who implement it. This statement holds true, as well, for cluster grouping. In order for this model to succeed it requires knowledge of the students for whom the model is provided, a willingness to collaborate, and a continual approach to professional development. The rationale, research, and goals have been outlined and serve as the conceptual basis for developing a site-specific application of Total School Cluster Grouping. The developed application should reflect the intent of the Total School Cluster Grouping Model while taking into account the nuances and needs of the site of its development. The implemented model should reflect the community of the school in which it is developed. As Renzulli (1986) described, common goals and unique means provide a solid foundation for a successful model.

Strong administrative support is essential for effective implementation. The identification process alone will require time outside of class for teachers to identify and assign students to classrooms. With administrative support, this time can be made available. Administrators also play a key role in that this model affects the entire grade level, or school. Unlike pull-out or self-contained programs, cluster grouping involves the placement of students of all achievement levels, not just the high ability students. Without the leadership and support of the school's administrative team, from the school counselor to the principal, cluster grouping cannot happen.

Prior to implementation it is important that the team of school personnel make a commitment to some very pointed professional development. Within each classroom, teachers will be dealing with a narrower range of students, but students who still present a variety of

needs. Therefore, professional development focusing on grouping, differentiation, and meeting the needs of high ability learners will be required for the entire staff. Initially, the school may need to seek help from outside to conduct such training. However, as the program develops and teachers become more comfortable and well versed in strategies that work, the need for outside presenters will lessen. However, there is always merit in keeping perspective by including strategies and ideas from outside of the local program. Good professional development is perpetual. Even the best models and strategies continually need to be revisited and updated to fit the needs of a school's current population.

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Questions for Discussion

1. How does total school cluster grouping differ from ability grouping?
2. What procedures can be employed to ensure that a student will be properly identified for the appropriate cluster?
3. Explain the role that professional development plays in this model.
4. How is a successful balance achieved within a single classroom in a cluster grouping program?
5. What resources might be needed for the most successful implementation of this structure?
6. If you were asked to prepare a proposal for your school board that addressed the strengths of cluster grouping, how would you construct your argument?

7. In reference to the prior question, what questions do you foresee being asked in response to your proposal?
8. At what schools or in which situations would cluster grouping be most effective?
9. Create a list of potential professional development topics that could further the effectiveness of cluster grouping at your school.

ⁱ The definitions of the terms *high-achieving*, *high-ability*, and *gifted* vary in the literature. The students in these studies were identified as *high-achieving*.