Total School Cluster Grouping

A Model to Improve Student Achievement and Teacher Practices

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Why Do We Educate Children? Re-focusing

To help each individual child reach his or her fullest potential for life-long learning, productivity, and citizenry in a diverse democracy and a global society ....

Generic Cluster Grouping

Common gifted education practice that places a group of high achieving, gifted, or high ability students in a classroom with other students and with a teacher who has received training or who is willing to differentiate curriculum and instruction for the identified cluster students.
Is not concerned with the other students or classes.

Rationale for Cluster Grouping

- The program is cost effective
- Allows for full-time services for G/T students
- G/T students clustered with their intellectual peers, as well as with age peers
- Some heterogeneity maintained
- Deliberate reduction in number and diversity of achievement groups for every teacher
- Removal of highest achievers allows other students to emerge as achievers

Background

- Conducted the original study in the mid 1990’s
  - NRC/GT monograph
  - GCQ article
  - Seminal study
  - New chapter in the Systems & Models book
New book
New replication research on-going
Scale-up National Project (2009-2014)
Total School Cluster Grouping
Definition, Features, and Goals

1. Specific, effective, researched application of cluster-grouping
2. Involves all children and all teachers
3. Focuses on gifted education and talent development as the basis for all classrooms

Features of Total School Cluster Grouping

4. Yearly identification based on student performance, with the expectation that student achievement will increase as students grow, develop and respond to appropriately differentiated curriculum
5. Identification encompasses low to high achieving students, with all student achievement levels identified
6. The classroom that contains the cluster of high achievers contains no above average students, as these students are clustered in the other classrooms

Features of Total School Cluster Grouping

7. Some classrooms may contain clusters of special needs students with assistance to the classroom teacher
8. Teachers may flexibly group within or among grade levels as well as use a variety of flexible grouping strategies within their classrooms
9. All teachers receive inservice in gifted education strategies

Research-based Benefits of Cluster Grouping

- Gifted students regularly interact with their intellectual and age peers
- Full-time services for gifted students without additional costs
- Curricular and instructional differentiation is efficient, effective, and likely when a group of high achievers is placed with a teacher who has skills and knowledge
- High expectations maintained in all classrooms

Research-based Benefits of Cluster Grouping

- Removing the high achievers from classrooms allows other student to emerge as achievers
- Student achievement increases when cluster grouping is used
- Over time fewer students are identified as low achievers and more students are identified as high achievers
- Reduces the range of student achievement levels that must be addressed by teachers in all classrooms

Unique, Flexible, Student-Based Identification System

- Uses a combination of tests and teachers to identify the achievement levels of all students that works with any learners
  - High Achieving
  - Above Average
  - Average
  - Low Average
  - Low
  - Special education

Gentry, 2
Definitions of ID Categories

1. **High Achieving** students are great at both math and reading.
2. **Above Average Achieving** students are good at math and reading or are great at either math or reading.
3. **Average Achieving** students achieve on grade level; they neither struggle nor do they excel.
4. **Low Average Achieving** students struggle slightly with reading and math, or they struggle with either reading or math.
5. **Low Achieving** students find school difficult, they struggle in all academic areas and are at risk of failure.

Terminology: Ability vs. Achievement

<table>
<thead>
<tr>
<th>ACHIEVEMENT</th>
<th>ABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observable, Manifest</td>
<td>Latent</td>
</tr>
<tr>
<td>Develops</td>
<td>Fixed</td>
</tr>
<tr>
<td>Readily accepted</td>
<td>Can bring out biases</td>
</tr>
<tr>
<td>Can be influenced by education</td>
<td>A predetermined quantity</td>
</tr>
</tbody>
</table>

Unique, Flexible, Student-Based Identification System

- Tests are used for means of inclusion only, not for exclusion
- Ever know a kid who is really bright but who doesn’t test well and who, thus doesn’t qualify?
- What about the kid who can but won’t?
- Who generally knows the kids best, tests or teachers?
- Multiple labels allowed!

Placement in Classrooms

- Facilitates reduction in the number and range of achievement groups for every teacher
- Evenly distributes the behavior problems
- Considers each child, each class each year
- Encourages collaboration within and among grade levels

ID, Placement, Classroom Configuration

- Class lists prepared—based on data
- Changes made during placement conference with teachers
- Parent requests, behavior issues, separation issues, and teacher fit issues are addressed
- One classroom had group of students identified as high achieving, with other students identified as average, low average or low

ID, Placement, Classroom Configuration

- Other classrooms each contained a group of Above Average students
- Sometimes a classroom would contain a LD or EBD cluster with assistance of a Teacher Consultant in the classroom
- Clusters of students receiving math or reading assistance might exist
- Some sites have arranged for clusters of English language learners with assistance
Sample Classroom Configuration

<table>
<thead>
<tr>
<th>ID Category</th>
<th>2nd grade</th>
<th>2nd grade</th>
<th>2nd grade</th>
<th>2nd grade</th>
<th>2nd grade</th>
<th>Total grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Achieving</td>
<td>11 0 0 0 0</td>
<td>11 0 0 0 0</td>
<td>11 0 0 0 0</td>
<td>11 0 0 0 0</td>
<td>11 0 0 0 0</td>
<td>11 0 0 0 0</td>
</tr>
<tr>
<td>Above-Average</td>
<td>0 7 7 7 7</td>
<td>0 7 7 7 7</td>
<td>0 7 7 7 7</td>
<td>0 7 7 7 7</td>
<td>0 7 7 7 7</td>
<td>7 28</td>
</tr>
<tr>
<td>Average</td>
<td>8 8 8 8 8</td>
<td>8 8 8 8 8</td>
<td>8 8 8 8 8</td>
<td>8 8 8 8 8</td>
<td>8 8 8 8 8</td>
<td>40</td>
</tr>
<tr>
<td>Low-Average</td>
<td>4 4 2 4 6</td>
<td>4 4 2 4 6</td>
<td>4 4 2 4 6</td>
<td>4 4 2 4 6</td>
<td>4 4 2 4 6</td>
<td>20</td>
</tr>
<tr>
<td>Low</td>
<td>0 6 6 4 0</td>
<td>0 6 6 4 0</td>
<td>0 6 6 4 0</td>
<td>0 6 6 4 0</td>
<td>0 6 6 4 0</td>
<td>16</td>
</tr>
<tr>
<td>Sp. Educ.</td>
<td>2* 0 2 2 4**</td>
<td>2* 0 2 2 4**</td>
<td>2* 0 2 2 4**</td>
<td>2* 0 2 2 4**</td>
<td>2* 0 2 2 4**</td>
<td>10</td>
</tr>
</tbody>
</table>

*note. This student is twice-exceptional.
**note. These students see the same teacher consultant who also helps the classroom teacher.

Sample Classroom Configuration

<table>
<thead>
<tr>
<th>ID Category</th>
<th>4th grade</th>
<th>4th grade</th>
<th>4th grade</th>
<th>4th grade</th>
<th>4th grade</th>
<th>Total grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Achieving</td>
<td>6 0 0 0 0</td>
<td>6 0 0 0 0</td>
<td>6 0 0 0 0</td>
<td>6 0 0 0 0</td>
<td>6 0 0 0 0</td>
<td>6 0 0 0 0</td>
</tr>
<tr>
<td>Above-Average</td>
<td>0 7 6 13</td>
<td>0 7 6 13</td>
<td>0 7 6 13</td>
<td>0 7 6 13</td>
<td>0 7 6 13</td>
<td>30</td>
</tr>
<tr>
<td>Average</td>
<td>10 10 10 10</td>
<td>10 10 10 10</td>
<td>10 10 10 10</td>
<td>10 10 10 10</td>
<td>10 10 10 10</td>
<td>40</td>
</tr>
<tr>
<td>Low-Average</td>
<td>8 0 6 14</td>
<td>8 0 6 14</td>
<td>8 0 6 14</td>
<td>8 0 6 14</td>
<td>8 0 6 14</td>
<td>24</td>
</tr>
<tr>
<td>Low</td>
<td>0 8 0 8</td>
<td>0 8 0 8</td>
<td>0 8 0 8</td>
<td>0 8 0 8</td>
<td>0 8 0 8</td>
<td>8</td>
</tr>
<tr>
<td>Sp. Educ.</td>
<td>1* 0 3**</td>
<td>1* 0 3**</td>
<td>1* 0 3**</td>
<td>1* 0 3**</td>
<td>1* 0 3**</td>
<td>4</td>
</tr>
</tbody>
</table>

*note. This student is twice-exceptional.
**note. These students see the same teacher consultant who also helps the classroom teacher.

Sample Classroom Configuration

<table>
<thead>
<tr>
<th>ID Category</th>
<th>5th grade</th>
<th>5th grade</th>
<th>5th grade</th>
<th>5th grade</th>
<th>5th grade</th>
<th>Total grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Achieving</td>
<td>6 0 0 0</td>
<td>6 0 0 0</td>
<td>6 0 0 0</td>
<td>6 0 0 0</td>
<td>6 0 0 0</td>
<td>6 0 0 0</td>
</tr>
<tr>
<td>Above-Average</td>
<td>0 7 7 7</td>
<td>0 7 7 7</td>
<td>0 7 7 7</td>
<td>0 7 7 7</td>
<td>0 7 7 7</td>
<td>7 21</td>
</tr>
<tr>
<td>Average</td>
<td>10 10 10 10</td>
<td>10 10 10 10</td>
<td>10 10 10 10</td>
<td>10 10 10 10</td>
<td>10 10 10 10</td>
<td>40</td>
</tr>
<tr>
<td>Low-Average</td>
<td>7 0 7 7</td>
<td>7 0 7 7</td>
<td>7 0 7 7</td>
<td>7 0 7 7</td>
<td>7 0 7 7</td>
<td>21</td>
</tr>
<tr>
<td>Low</td>
<td>0 6 10 0</td>
<td>0 6 10 0</td>
<td>0 6 10 0</td>
<td>0 6 10 0</td>
<td>0 6 10 0</td>
<td>26</td>
</tr>
<tr>
<td>Sp. Educ.</td>
<td>2* 0 2 4**</td>
<td>2* 0 2 4**</td>
<td>2* 0 2 4**</td>
<td>2* 0 2 4**</td>
<td>2* 0 2 4**</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>26 26 26 26</td>
<td>26 26 26 26</td>
<td>26 26 26 26</td>
<td>26 26 26 26</td>
<td>26 26 26 26</td>
<td>125</td>
</tr>
</tbody>
</table>

*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, the teacher consultant will work in the classroom with the teacher. Her class size has been reduced.

Addresses the Limited Seats on the “Gifted Bus” Syndrome

- Think about the under-represented kids in a system of programming that limits the numbers of students who can be gifted
- What if there are more or fewer kids in a given year?
- TSCG addresses this, as students who need services are served, it’s that simple.
Provides full-time services

- Gifted kids are gifted more than once a week
- Integrates the g/t program with the general education program
- Adds no additional cost, but adds considerable expertise
- Works in conjunction with other programs and services, e.g., pull-out, send-out, self-contained

Programming

- Promotes flexible uses of achievement grouping
- Removes the ceiling
- Targets various readiness and achievement levels so that students can make progress
- Facilitates authentic differentiation and continuous progress
- Brings gifted education to the masses

General Education Borrows Gifted Education Strategies: Students Benefit

- Individualization
- Curriculum compacting
- Challenges
- Choices
- Interests
- High teacher expectations
- Use of grouping

Addresses the Ability-Grouping Myths

- You took my sparks
- The gifted kids are the models and leaders for the other kids
- Ability is fixed
- Grouping hurts the kids, removing the high achievers causes others to fail
- If we label or tell the students, they’ll know
- It can all be done in the regular heterogeneous classroom

Table 1. Grouping Terminology Summary

<table>
<thead>
<tr>
<th>Term/Grade</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster</td>
<td>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.</td>
</tr>
<tr>
<td>Total School Cluster Grouping</td>
<td>Cluster grouping model that takes into account the achievement levels of all students and places students in classrooms in order to reduce the number of achievement levels within and between classes.</td>
</tr>
<tr>
<td>Ability Grouping</td>
<td>Students are grouped for the purpose of modification of pace, instruction, and curriculum. Groups can be flexible and assigned by subject, within the classroom, or between classes.</td>
</tr>
<tr>
<td>Achievement Grouping</td>
<td>Groups are determined by levels of achievement by subject and is termed as something dynamic and changing. All steps can be negotiated by subject within a classroom.</td>
</tr>
<tr>
<td>Between Class Grouping</td>
<td>Students are grouped for a subject area. It results in classroom groups that are heterogeneous in achievement level. The achievement levels of students in a classroom are considered.</td>
</tr>
<tr>
<td>Within Class Grouping</td>
<td>Students are grouped for a subject area that is within an elementary level. Teachers instruct students working at similar levels with appropriately challenging curricula, at an appropriate pace, and with methods most suited for classroom activities.</td>
</tr>
<tr>
<td>Track</td>
<td>The full-time placement of students into ability groups for an entire year is followed in the junior and senior high schools. Students are grouped in the junior high school for academic courses.</td>
</tr>
</tbody>
</table>
| Flexible Grouping | The use of all various forms of grouping for instruction, pacing, and curriculum in a way to ensure that the achievement of students is maintained and among groups based on total progress and needs.
Program Philosophy and Practices

- Curricular emphasis placed on advanced methods and content
- High teacher expectations were the norm
- Flexible, individualized, student oriented approach to placement and teaching
- Extensive, responsive, on-going professional development
- Flexible grouping

Research Questions & Results

1. Is cluster grouping related to teacher perceptions of student achievement as measured by teacher identification categories?
2. How does the achievement of students from a school using cluster grouping compare with that of students in a similar school not using cluster grouping?
3. How does cluster grouping affect the representation and achievement of students from underrepresented populations?
4. What factors exist within the classroom and school using cluster grouping that may influence student achievement?

Methods & Procedures

- Quasi-experimental, descriptive, experimental
- Entire grade levels of students over time, different settings
- Use of NCE achievement, repeated measures
- Qualitative component

Identification findings

- Changes in identification categories were consistent
- Number of students identified as HA increased during the 3 program years
- Number of students identified as LA decreased during the 3 program years

Identification frequencies

Gentry, 6
Identification Frequencies

Changes in Low Achievement Identification Frequencies

<table>
<thead>
<tr>
<th></th>
<th>Class of 2000</th>
<th>Class of 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased</td>
<td>47%</td>
<td>34%</td>
</tr>
<tr>
<td>Decreased</td>
<td>3%</td>
<td>9%</td>
</tr>
<tr>
<td>No Change</td>
<td>40%</td>
<td>45%</td>
</tr>
<tr>
<td>Varied</td>
<td>9%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Total Sample Identification Categories: Years 1 and 2

<table>
<thead>
<tr>
<th>Identification Category</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>248</td>
<td>206</td>
</tr>
<tr>
<td>Average</td>
<td>192</td>
<td>182</td>
</tr>
<tr>
<td>High</td>
<td>50</td>
<td>46</td>
</tr>
</tbody>
</table>

Treatment School 1 Identification Categories: Years 1 & 2

<table>
<thead>
<tr>
<th>Identification Category</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>130</td>
<td>90</td>
</tr>
<tr>
<td>Average</td>
<td>110</td>
<td>110</td>
</tr>
<tr>
<td>High</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

Treatment School 2 Identification Categories: Years 1 & 2

<table>
<thead>
<tr>
<th>Identification Category</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Average</td>
<td>64</td>
<td>52</td>
</tr>
<tr>
<td>High</td>
<td>59</td>
<td>59</td>
</tr>
</tbody>
</table>

Percentage of Total Sample who are low-income by Identification Category: Years 1 and 2

<table>
<thead>
<tr>
<th>Identification Category</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>Average</td>
<td>70</td>
<td>80</td>
</tr>
<tr>
<td>High</td>
<td>80</td>
<td>90</td>
</tr>
</tbody>
</table>
Identification findings

The high achieving students were all with [teacher 5A], and we expected more from the students we had. By removing some of the higher kids it may have influenced the others to work harder...and maybe teachers expected more because we didn’t have the higher students and treated it as a regular classroom and expected the average students to rise to the occasion.

--Teacher 5C

Achievement

Achievement Results
Gentry, 9

Student Achievement Increases

- Students in the treatment school began with lower total achievement than those in the comparison school
- After 3 years in the CG program, treatment school students outperformed their comparison school counterparts
- Much of the increase can be attributed to the students from categories other than “high achieving.”

Student Achievement Increases

Maybe CG had a lot to do with it. The CG 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...you know those high kids are competitive and tend to dominate class sometimes.

--Teacher 4C

Student Achievement Increases

...when you pull those really high kids out--those who always have their hands up first and jump in with the answers--when you get rid of those students by putting them together in the cluster classroom--the other kids have a chance to shine. They take risks more often, and see themselves as leaders of the group. They are no longer frightened to offer answers.

--Teacher 3E

Qualitative Explanations

- The Use of Grouping
- Teachers Matter
- The General School Environment

The Use of Grouping

- Within-grade grouping by skill levels for math and reading
- Within-class grouping
- Flexible grouping
- Grouping affected identification (93% of teachers believed it led to more student identified as AA/HA)
- Grouping helped teachers meet individual needs in classrooms

Grouping and Student Needs

By using achievement grouping we are able to challenge the high achievers and meet the needs of the low achievers without having either feel like they've been singled out. We are able to adjust our curriculum and instruction to meet the individual needs of the students at their levels. Cluster grouping helps us do this.

--Teacher 3C
The Roles and Effects of Teachers

- Teachers matter
- Their classroom environments were positive
- High, Yet Realistic Teacher Expectations
- Integrating thinking skills, problem solving, projects, acceleration, adjusting assignments
- Spending time with high achievers, developing curricular extensions
- Providing choice of partners or groups, or to work alone or together
- Using open-ended questions, independent study, challenge questions, curriculum compacting, enrichment, choice of problems or assignments

The General School Environment

- Strong Administrative Leadership and Support
- Professional Development Opportunities
- Belief in Colleagues and Collaboration
- Program Benefits to All Students and Teachers

Shared Leadership

The teachers are the ones making the decisions, so they have a great deal of say in the program. I think that this type of leadership in the classroom has given them real ownership in the program. Our job as administrators is to support the program that the teachers have developed

---Superintendent

Professional Development and Collaboration

I’ve learned so much from [Teacher 3A] and I adapt many of the strategies that she uses with her high achievers and use them with my learning disabled and low achievers. I don’t think that gifted education is just for gifted students.

---Teacher 3B

Implications: Identification Findings

- Cluster grouping used in conjunction with challenging instruction and high teacher expectations, may improve how teachers view their students with regard to ability and achievement

Implications: Achievement Findings

- Cluster grouping may positively influence the achievement of all students
- Flexible achievement grouping used in conjunction with challenging curriculum should be considered when designing educational programs
Implications: Qualitative Findings

- The use of gifted education “know-how” has the potential to improve general education practices
- Unlike suggestions by many reformers, the elimination of grouping may not be beneficial to students and teachers.
- Professional development in gifted education should not be restricted to just those teachers responsible for students identified as gifted

General Implications

- A well developed cluster grouping program can offer gifted education services to high achieving students while helping teachers better meet the needs of all students
- Placing the high achievers in one classroom can increase the chance that their needs will be met while offering the opportunity for talent to emerge in the other classrooms
- Restricting the range of achievement levels in elementary classrooms can help teachers better address individual needs

References


References


References