Elementary Mathematics

Differentiation / Flexible Grouping / Mixed-ability Classrooms

Why not have homogeneous below level classes?

Tracking for below level groups is one of the most destructive aspects of homogeneous groups. Several negative things occur when below-level students are grouped together. First, the over-riding trend is that tracked students are not accelerated (usually growth is not even maintained) and therefore never move in the direction of grade-level mastery. Second, it becomes difficult on the part of the teacher to retain an accurate view of what grade level standard looks like. Third, students in below level groups typically don’t have access to higher level thinking and questioning. More often, these classes solely address functional skills and low-level learnings. Finally, homogeneously grouped students don’t have access to a variety of strategies and thought.

Why not have homogeneous above level classes?

It would seem that it is more convenient (perhaps easier) for the teacher to provide challenges for homogeneously grouped above-level students, and at times it is beneficial for children to have access to high levels of thinking from other above level students. However, “Heterogeneous classrooms provide greater learning opportunities for low-ability students, without being detrimental to high-ability students” (Strahan, Hartman, and Sikes). Heterogeneous grouping practices allow for “varied, broad peer interactions to allow students to socialize with, model, and adjust to a variety of peer influences” (Spear 1992).

It is most important that children first master the grade level curriculum. Often master of the grade level expectations is assumed by the teacher, rather than demonstrated by the students. In higher ability classes, the depth of understanding for students believed to be above level is often overlooked, again assuming that conceptual understanding exists, when the student has demonstrated only procedural knowledge. Finally, once tracked into above level groups, it is very difficult to move a child into an on-grade as well as move an on-grade student into the above level group (because the gap between the two groups has widened significantly).

How does acceleration differ from enrichment?

When we accelerate, students move through one or more subject areas more quickly than in a standard school program. There must be a clear understanding that while we accelerate, we make sure that children have conceptual understanding before we move on. This is a beneficial consideration for below grade level students, as it moves them forward in meeting grade level expectations. When we enrich, students are using problem-solving and mathematical thinking connected to stimulating mathematical concepts. Conceptual understanding is widened. All students should experience enrichment to support improving understanding.
When it is appropriate, use acceleration to the point where there is mastery of grade level expectations. Enrichment becomes more desirable to insure deep understanding of the concepts.

**Communication**

**What do I say to parents?**

This is a multi-faceted question but points to the issue of successfully keeping parents informed throughout.

**Pre-implementation** As a school begins to move toward more heterogeneous grouping in math, parents need to understand why such a move is coming and how it will impact instruction. The staff in each school should be prepared to communicate how and why grouping decisions are made, using consistent and supportive language. This could be presented at Back to School Night, Open House, and/or PTA Meetings.

**Implementation**

Further into implementation, when it actually becomes real for their child, parents need to see how their child’s needs are being met, how they are being challenged, and how the school is preparing their child for his/her future. This communication occurs in many forms and caution should be taken to recognize that much communication with the home occurs in indirect ways (homework, word-of-mouth, textbook use, etc.). This suggests that both direct and indirect communication must be well planned and focused on the short and long-term benefits of this change.

**Are you slowing down my child to meet the needs of the other children?**

This is a critical question that schools/teachers must be prepared to answer. Discuss with parents the value in providing children with opportunities to work with diverse thinkers. Parents need to know that it is important for all children to first master the grade-level curriculum. In addition to this, children who show mastery will be enriched with differentiation strategies and will be flexibly grouped, as is done in language arts.

**How does the 5th grade teacher recommend for middle school?**

In communicating to the middle school, recommendation for placement is an aspect that is changing as FCPS has revised its curriculum to align with the VSC. Students do not need to have mastered the above grade curriculum in order to be placed in an honors class. The standards have risen and deep understanding of grade level indicators and the ability to communicate set a child up well for success in an honors program. This question is one that will in the fall of 2005 be addressed by a committee focused on articulation between elementary and middle school. (Audit Committee Recommendations 2005)
Assessment

How do I assess kids and make decisions about which group they belong in?

Assessment for grouping in a mixed-ability classroom must occur in an on-going way using both formal and informal assessments. Many grouping decisions can be made as a skill is introduced if children are given the opportunity to show what they know. But even these decisions are preliminary and must be adjusted as children demonstrate their understanding or lack thereof. Grouping decisions can be made using in-class work, quizzes, tests, journals, kid watching, exit card, conferencing, etc.

What do we do in terms of quarterly assessments?

Guidelines for the use of quarterly assessment are housed in the Examiner’s Manual. The grade-level assessments can serve as both a measure of mastery of expectations, as well as set some guidelines for what the expectations are. But, some decisions must be made student-to-student. Quarterly assessments, along with other tools should assess whether a child has mastery.

Grading

How do we level kids on a report card?

It must be recognized that the report card is one form of communication (albeit a very limited form) and as such again must be planned for in light of the change. The report card indicates whether a child is working below, at, or above grade-level standards. In mixed-ability classrooms, the focus tends to be on grade-level standards or above. Therefore, most students will have an indication on the report card of “at gradelevel”. But, many children will spend significant amounts of time working on precursor skills and concepts. This requires the teacher to clarify the report card indication. The same is true for students being challenged beyond grade-level standards. The end-of-year report card also indicates level of mastery. This needs to be a true indication as determined through the multiple measures the teacher has used throughout the year. This indication mandates successful communication throughout the year so that parents are not surprised.

An example of what is explained above could be: Throughout the year, a third grade student is working on grade-level expectations, but has frequently needed support and reteaching to experience success. The child can be listed as being instructed “on grade level”. At the end of the year, the report card is marked “not meet grade level standard”, because mastery of all grade level curriculum and independence has not been met by this student.

Differentiation and Grouping in Mathematics

Bibliography

2005-2006


Tomlinson, C (2000). How to Differentiate Instruction in Mixed-Ability Classrooms, ASCD.


Does Ability Grouping Help or Hurt?

http://www.fcppsteach.net - Go to link for Elementary Mathematics and for Gifted and Talented Education.


