

Grouping the gifted and talented: Questions and answers

This article by **Karen B. Rogers** offers a synthesis of the research on ability grouping. Rogers addresses five questions about the academic, psychological and socialization effects on gifted learners of grouping for enrichment, cooperative grouping for regular instruction and grouping for acceleration. She includes extensive answers for each.

- **Topics**
 - [Educational Options: Ability Grouping](#)
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- **Publisher**
Roeper Review
- **Volume**
Vol. 16, No. 1
- **Year**
September 1993

Five questions about the academic, psychological, and socialization effects on gifted and talented learners of grouping for enrichment, cooperative grouping for regular instruction, and grouping for acceleration are addressed. The conclusions drawn from 13 research syntheses on these practices, conducted in the past 9 years are described. In general, these conclusions support sustained periods of instruction in like-ability groups for students who are gifted and talented.

Perhaps this title is presumptive: questions and answers. Certainly anyone can produce the questions educators have about the effects of grouping the gifted. But there must be some presumption in any one writer claiming to have the answers as well. Can one talk about differing group configurations without first clarifying the purposes for that grouping? For example, are we inquiring about grouping for enrichment **or** grouping for the acceleration of content, **or** grouping for effect? And when we ask about grouping the "gifted," in particular, are we referring to highly-able students (defined by some researchers as the top third of grade level performance) or are we talking about the gifted, defined as performing or capable of performing at extraordinary levels in specific ability domains? Even a cursory survey of recent articles reveals that these questions have not always been asked before answers about the grouping issue have been given.

Why has ability grouping become such a big issue in the last 5 years? Why have so many well-intentioned educational researchers blamed ability grouping for the widespread ills currently plaguing American schools? As educational leaders have struggled to find the answer to our country's educational woes, we have seen the implementation of a plethora of whole group and cooperatively structured instructional strategies to be applied to heterogeneous groups of students, each guaranteed to solve our problems. Educators have learned how to implement Madeline Hunter's MP, Metra Companion Reading, group-based mastery learning, assertive discipline, and cooperative learning programs for what is believed to be the empirically supported betterment of all classroom learners, regardless of achievement or ability level.

Elimination of ability grouping has hit the gifted education movement very hard. Joyce Van Tassel-Baska (1991) has suggested that grouping and cooperative learning issues may be even more damaging to gifted education than just losing opportunities for intellectual peers to learn together. These issues may, in fact, be diverting us, as well as general educators, from focusing on the curricular and instructional needs of gifted learners. Gifted educators are now confronted with shoring up the erosion of years of effort: fighting the loss of high ability reading or math groups, the elimination of gifted pull-out or resource programs of enrichment, and the removal of Advanced Placement and enriched or honors classes. There is little time left over for constructing innovative differentiation for their gifted and talented charges.

The issue basically under debate-like-ability grouping versus mixed-ability grouping- has become a heated and emotional one. Both sides believe that whatever decisions they make are, of course, in the best interests of the majority of students. With the concern for "at risk" students of high priority nationally, educators continue to search for a method that will keep these students involved and successful in school. As Oakes (1990) and George (1988) have argued, all students, especially our "at risk" ones, must be given full access to the knowledge society considers "high status," if we are to ensure them choices for their futures. Unfortunately, this focus may have diverted needed attention from the majority of American students who have been well-served by our schools and from the minority who have been chronically underserved academically.

Knowing that we will not be able to answer the larger questions that accompany these priorities, we should probably concentrate on the problem at hand-understanding the general effects of grouping and not grouping gifted learners. There are five major questions about grouping to consider, each of which this article attempts to answer:

What are possible grouping options to consider when grouping gifted learners?

What are the academic effects of these grouping options for gifted learners?

What are potential social and psychological effects of these grouping options?

Are there some concerns we should have about grouping gifted learners together?

What might be the costs of not providing grouping for gifted learners?

Before beginning to provide answers for these five questions, it is important to understand how we can find out what are the effects of grouping the gifted. (In other words, which research should we try to understand?) The most difficult problem all educators must face is how to make sense of the overwhelming body of research that is out there. Currently, on grouping issues alone, there are over 750 studies on ability grouping, and over 300

each on cooperative learning and acceleration. What is the appropriate approach to managing all these data? In effect, educators, the ultimate consumers of research, have taken five basic approaches to the research:

1. I know this student who...
2. I found this study;
3. famous person;
4. apples and oranges; or
5. best-evidence synthesis.

Some of these methods are better than others.

The "I know this student who..." approach occurs when an educator recalls a similar instance of the current situation, reflects on how successful the action taken previously was in the long run, and applies similar or alternative action in the current situation. For example, Robin, a second grader, is reading at fifth grade level and her teacher wants to know what to do next. The teacher remembers that 3 years ago there was a child whom the school placed in fifth grade during reading time, but the child did not do very well. The reading teacher thus decides that Robin must stay in her second grade class for reading and will be happier waiting 3 years for her classmates to catch up. Obviously, this method uses anecdotal research, at best, and can hardly be called a sound approach to the research.

Closely related is the "I found this study" approach, in which an educational decision-maker, with a point of view based on personal experience or "gut" feelings, locates one or two research studies supporting this view and disseminates them to superiors, colleagues, and school staff (also known as the "mailbox effect"). Decisions are then made for changes in practice based on this limited and possibly biased research base. The problems with such an approach are obvious. There are few practices in education, let alone in gifted education, that are comprised of a research base of two. It would be just about impossible to find two studies that systematically, objectively, and comprehensively represent the 750- plus research base on ability grouping, or the 300-plus bases for acceleration or cooperative learning.

The "famous person" approach has been an exceedingly popular approach to research in the 1980s and 1990s. This approach involves the reporting of broad, simplistic claims by a well-known educator (with strong feelings about a certain practice) that his/her recommendation is "research-supported." In most of these cases, the research actually cited by the person is either tangential or focused on only a very small part of the total research surrounding the practice. Oakes' (1985, 1990) persuasive arguments against ability grouping reflect her own case study of 25 junior and senior high schools. George's (1988) arguments against "tracking" for middle school students have been reflections on a single section of one research synthesis by Slavin (1987a), describing the effects of this practice on elementary students. References to the research supporting cooperative learning as beneficial for gifted students by Johnson and Johnson (1990) appear to have been based on a single, poorly

designed quasi-experimental study comparing the immediate and long-term effects of a 5-day treatment on handicapped, regular, and "gifted" students with no specification of how any of these groups of students were identified (Robinson, 1990). Although the "famous person" approach may be a very effective means for promoting educational change, this approach does not adequately or accurately represent the research on these strategies and their effects on students with gifts and talents.

The "apples and oranges" approach to the research describes the technique of meta-analysis, first introduced by Glass in 1976. This approach involves an attempt to collect all general research studies conducted on a practice and to average across all these studies to calculate a mean effect size. The effect size is first calculated for each study separately, using the formula $ES = \frac{M_e - M_c}{s_c}$, where M represents the mean scores of the experimental (e) and control (c) groups and s represents the standard deviation of the control group. These individual effect sizes are then averaged to calculate the mean effect size across all the studies.

In many cases, this averaging process is done regardless of the quality of individual research studies included, the size of samples in the studies, or the specific form of the strategy. Such was certainly the case in some of the early meta-analyses of the research on ability grouping. There can, however, be a greater degree of validity in drawing conclusions about the effects of an instructional practice when care has been taken to use well-defined inclusion criteria for this research synthesis procedure. The effect size metric translates easily into an understandable classroom application. An effect size of $+ .30$ generally accepted as indicating practically significant (acceptable gains) effects, would indicate that the experimental group involved in the new practice performed approximately 3 school months further along the standardized test's grade equivalent scale than the control group, or, in effect, the experimental students could potentially be taught in 3 years what the control students would accomplish in 4 (Glass, McGaw, & Smith, 1981). With care, then, the "apples and oranges" approach to the research can be useful and appropriate. At the present time, this method has been used to synthesize the research on various forms of grouping by ability for elementary and secondary students in seven different reports, but the Kuliks (Kulik, 1985; Kulik & Kulik, 1982, 1984, 1990) and Vaughn, Feldhusen, and Asher (1991) have directly applied this method to the grouping research on gifted and talented students.

Similarly, the "best-evidence" approach follows the same collection and calculation procedures as meta-analysis, but once all the studies have been collected, the research synthesizer categorizes them by instructional variation and selects only the strongest studies for each variation to generalize and average. Some critics of this approach have argued that the role of the synthesizer becomes one of judge and jury, but the skillful reader should be able to determine whether or not the judgments are appropriate by taking care to ferret out the synthesizer's methods of inclusion and exclusion. This final approach was first proposed and used by Slavin to synthesize the research on ability grouping for elementary students (1987a), ability grouping for secondary students (1990a), and cooperative learning (1990b). None of these syntheses included specific research studies on students who are gifted. The approach has also been used by Rogers (1991) to synthesize research on 12

accelerative options for gifted students, several of which involve the grouping by ability of gifted and talented learners.

In summary, we can answer our questions about the effects of grouping the gifted by understanding the 13 research syntheses on grouping for enrichment, cooperative learning, or acceleration, all of which have used one of the latter two approaches to research.

Question One: What are possible grouping options to consider when grouping gifted learners?

A variety of grouping options have been found beneficial for learners who are gifted and talented, including full-time placement in special enriched or accelerated gifted programs, regrouping for enriched instruction in specific subjects, cross-grade grouping for specific subjects, pull-out grouping for enrichment, cluster grouping within an otherwise heterogeneous classroom, and within-class ability grouping. An option still under question for regular use with gifted learners would be most forms of mixed-ability cooperative learning. The research supports these program option recommendations in the following order, according to the strength of the research findings. It is to be noted, however, that differential effects may be expected from district to district due to individual variations in population, organizational structure, personnel, and school culture. Hence, some of the options listed further down on the list may be the most appropriate option for one district, and the top- tested option may be least appropriate in some cases.

Full-time gifted programs. Four research syntheses, all conducted by James and Chen-Lin Kulik (Kulik, 1985; Kulik & Kulik, 1982, 1984, 1990), have shown there is a marked academic achievement gain across all subject areas, as well as a moderate increase in attitude toward the subjects in which these students are grouped, when that grouping is full-time in special programs. Little has been documented in this research base, however, to attribute the academic gains to grouping directly or to the differentiation of curriculum and instructional methodology, both of which may be more easily facilitated by such a grouping arrangement.

Cluster grouping within heterogeneous classrooms. The Kuliks' 1990 meta-analysis identified four research studies that looked at this particular programming option, in which the top 5-8 gifted learners at a grade level are placed with a trained teacher of the gifted and the remainder of that teacher's load includes a normal distribution of ability. The rationale for such an option has been that the teacher can spend a proportionate amount of instructional effort and curriculum development time on the gifted cluster, which may not be possible when a classroom contains only 1-2 of these students. A sizeable academic gain across all academic areas was reported for this option. Due to the comparatively small number of studies, this option was not listed **first** despite the greater gains reported. It is believed that with a comparative sample of 25 studies as were found for full-time gifted programs, the effect size would probably be similar to the **first** option's effects.

Grouping for acceleration of the curriculum. In the Kuliks' meta-analysis of the combined effects of acceleration, gifted accelerates showed substantial achievement gains over their gifted counterparts who were not accelerated, and there was no difference in their performance from their equally gifted older-aged peers. Rogers (1991) found substantial academic gains for **five** of the six more specific forms of acceleration which are often implemented as small group strategies: Non-graded Classrooms, Curriculum Compacting (general streamlining of the previously mastered curriculum), Grade Telescoping (time compression of the junior or senior high curriculum), Subject Acceleration (accelerated progression through one subject area), and Early Admission to College (without a high school diploma). The sixth option, Advanced Placement, was very close to representing a substantial academic gain as well.

Regrouping for enriched learning in specific subjects. Slavin's (1987a) best-evidence synthesis established the potential of regrouping in one or two subjects per year for the general population at the elementary level, but he could not establish a similar pattern at the secondary level (1990a). The Kulik and Kulik (1990) meta-analysis reported substantially higher effects for gifted students when they are regrouped for specific instruction than for students at other ability or achievement levels, even when differences in the quality of the instruction and instructional materials could not be documented. Their synthesis combined elementary and secondary studies; they refuted outright Slavin's previous conclusions that regrouping produces no academic gains for any level of student at the secondary level. Gamoran and Berends' (1987) synthesis of ethnographic and survey research established a marked likelihood that "academic" track students were more likely to plan on and to attend college. Generally, the syntheses seem to support regrouping as a viable option for gifted and talented learners.

Cross-grade grouping or nongraded classrooms. Slavin's (1987a) synthesis of grouping research on cross-grade grouping in reading and mathematics for elementary students reported substantial academic gains in reading and some evidence of similar gains in mathematics for students of all ability levels. The Kuliks' meta-analysis on cross-grade grouping K-12 located 16 studies, which established a moderate gain across all subject areas. Rogers' (1991) best-evidence synthesis reported sizeable academic gains for nongraded classrooms, in which gifted students would work at their own pace in every subject area full-time.

Enrichment pull-out programs. Vaughn, Feldhusen and Asher's (1991) meta-analysis produced substantial improvements in achievement, critical thinking, and creative thinking for gifted and talented learners. Gains appeared to be greatest for achievement when the pullout experience was an extension of the regular classroom curriculum.

Within-class ability grouping. Slavin's (1987a) best-evidence synthesis reported substantial academic gains for elementary learners at all ability levels in mathematics, but he could find no controlled studies to support within-class ability grouping in reading, despite its widespread use in American schools. The effects of within-class ability grouping for gifted learners may be extrapolated from the combined syntheses of the Kuliks (1982, 1984,

1990) and Vaughn et al. (1991) meta- analysis of research on enrichment pull-out programs. There is every reason to believe that such forms of ability grouping, although short-term, are extremely beneficial to gifted learners when the materials for those groupings have been appropriately differentiated.

Cooperative grouping for regular instruction. Robinson's (1990) exhaustive search of the literature was unable to uncover any solid research to substantiate academic achievement gains for gifted learners when placed in cooperative settings with students of mixed ability. Studies on the efficacy of cooperative grouping with students of Re ability has been conducted primarily at the college level in mathematics (e.g., Fullilove & Triesman, 1990), but this small database is far from generalizable at this point. There is no question that previous research syntheses have established the academic efficacy of some forms of cooperative learning for average, low ability, special education, ethnically diverse, and economically disadvantaged learners (Johnson, Maruyama, Johnson, Nelson, & Skon, 1981; Slavin, 1990b), but a similar pattern for enhanced learning has not been effectively established for gifted learners.

Question Two: What are the academic effects of these grouping options for gifted learners?

Keeping in mind that a mean or median effect size of $+0.30$ is generally considered the level at which gains are considered practically significant or "substantial," the following effect sizes have been reported for the grouping options listed previously. As can be seen in Table 1, the academic gains are substantial for a wide variety of grouping options for gifted learners. Care should be taken, however, in comparing the effect size estimates across program options. In some cases, the effect size represents a one-time comparative gain, and for other options, that gain may be cumulative. Likewise, a higher effect size does not automatically represent a superior program option, such that we can take the program with the highest effect size and eliminate all programs with smaller effect sizes. The individual variations in organization, personnel, population demographics, and culture from school to school may be more important to the success of a particular program option than the numbers reported here.

**Academic Effect Sizes of Program Options
for Gifted Students**

Option	Academic Effect Size
Early Entrance to School	.39
Subject Acceleration	.49
Curriculum Compaction	.45
Grade Skipping	.78
Enrichment (pull-out)	.65
Enriched Classes Ability Grouped	.33
Cross-grade Grouping (reading, math)	.45

Nongraded Classes	.38
Concurrent Enrollment	.36
Regrouping for Specific Instruction(reading, math)	.43
Advanced Placement	.29
Credit by Examination	.75
Cluster Grouping (specific differentiation	.33
Cooperative Learning Johnsons "Learning together"	.0
Enriched Classes Ability Grouped	.33
Slavin's TGT	.38
Slavin's STL(combination)	.30
Grade Telescoping	.56
Mentorship	.42

Question Three: What are potential socialization and psychological effects of these grouping options?

If we assume that by socialization we are including knowledge of social skills, social maturity, participation in extracurricular activities, leadership activities, and peer interaction ratings, very few forms of grouping have been tested for socialization effects. No such research has been located for full-time or short-term ability grouping between or across grade levels. Socialization outcomes have been studied for some accelerative options involving grouping. No differences in socialization have been found when gifted students are placed in nongraded classrooms or allowed early admission to college (having skipped twelfth grade). Moderate gains ($< .30 > .20$) have been reported for grade telescoping and Advanced Placement programs. There has been no research reported on the socialization effects of subject acceleration or with curriculum compacting.

The research is a little less sparse on the psychological effects of grouping when we include self-esteem, confidence, emotional development, emotional health, creativity, risk-taking, and independence as part of the definition of psychological effects. The Kuliks (Kulik, 1985; Kulik & Kulik, 1984, 1990) traced differential effects on self-esteem by ability levels in multitrack studies (that is, all students in a school were placed in one or three tracks), finding that self-esteem decreases somewhat for gifted and average learners, but improves somewhat for low ability students. For gifted learners placed in full-time special programs, no differences in self-esteem could be established across the 14 studies that have dealt with this research question. Finally, in Vaughn et al.'s (1991) meta-analysis of enrichment pull-out programs, a slight improvement in self-esteem was noted across the four studies that measured this effect. Rogers' best-evidence synthesis reported small gains in self-esteem for nongraded classrooms and early admission to college, a small decline in self-esteem for subject acceleration, no differences in esteem for Advanced Placement and grade telescoping, and no studies on self-esteem reported for curriculum compacting.

What seems evident about the spotty research on socialization and psychological effects when grouping by ability is that no pattern of improvement or decline can be established. It is likely that there are many personal, environmental, family, and other extraneous variables that affect self-esteem and socialization more directly than the practice of grouping itself.

Question Four: Are there some concerns we should have about grouping gifted learners together?

The concerns that have been raised by Oakes (1985) and George (1988) must be thoroughly investigated from all perspectives and the real causes of the concerns must be identified if they are not found to be caused by the action of grouping itself. In Oakes' ethnographic study of 25 schools, she found differences in the morale of teachers assigned to different levels of tracking. She described differences in their expectations of students and differences in the strategies they chose to use with their assigned students. She found greater numbers of ethnic minorities and the economically disadvantaged in the lower track classes. Although none of the differences she noted could be statistically substantiated, it is important to ascertain that these differences do not stem from conscious, systematic decisions to discriminate against any group of students.

Gamoran and Berends (1987), in their synthesis of research studies similar to Oakes', could find no studies that suggested such discrimination. The work of Haller (Haller & Davis, 1983; Haller, 1985) in recent years has even appeared to confirm that placement decisions are directly influenced by teachers' perceptions of a student's previous and present performance. No evidence could be found that teachers or counselors use racial or social information about students in making decisions about their placement. Even so, the situation remains: ethnic minorities and the economically disadvantaged have been over-represented in low track and "basic" classes. It is important that we change this situation, seek to understand its causes, while at the same time we continue to provide appropriate ability grouping options to our identified gifted and talented.

Concerns also about separating gifted students for special programs and thereby giving them no opportunities to learn to appreciate the diversity in their society must also be addressed through further research. There are no easy answers to these concerns. Would full-time heterogeneous classes produce more or less appreciation for diversity among age peers? Who would benefit from this full-time mixing? Oakes (1985) and George (1988) would say all students would be better prepared for the ethnically diverse society we have begun to encounter, but Slavin (1987b), among others has voiced some concern over the one-classroom-fits-all methods full-time mixed-ability classrooms tend to create. In his meta-analysis of research on group-based mastery learning, he generalized this concern well beyond mastery learning itself:

Is mastery learning a Robin Hood approach to instruction? Several critics (e.g., Arlin, 1984; Resnick, 1977) have wondered whether mastery learning simply shifts a constant amount of learning from high to low achievers. The evidence from the present review is not inconsistent with that view: in several studies positive effects were found for low achievers only. In fact, given that overall achievement means are not greatly improved by group-based

mastery learning, the reductions in standard deviations routinely seen in studies of these methods and corresponding decreases in correlations between pretests and posttests are simply statistical indicators of a shift in achievement from high to low achievers.

However, it is probably more accurate to say that group-based mastery learning trades coverage for mastery. Because rapid coverage is likely to be of greatest benefit to high achievers while high mastery is of greatest benefit to low achievers, resolving the coverage-mastery dilemma as recommended by mastery learning theorists is likely to produce a "Robin Hood" effect as a byproduct.

It is important to note that the coverage vs. mastery dilemma exists in all whole-class group-paced instruction, and the "Robin Hood" effect may be produced in traditional instruction. For example, Arlin and Westbury (1976) compared individualized instruction to whole-class instruction, and found that the instructional pace set by the teachers using the whole-class approach was equal to that of students in the twenty-third percentile of the class ability distribution. Assuming that an instructional pace appropriate for students at the twenty-third percentile is too slow for higher achievers (Barr, 1974, 1975), then whole-class instruction in effect holds back high achievers for the benefit of low achievers. Group-based mastery learning may thus be accentuating a "Robin Hood" tendency already present in the class-paced traditional models to which it has been compared. (Slavin, 1987b, pp. 50-51)

What might this extensive quotation say in answer to Question Four? Perhaps only that it is important that research produced in the next few years attribute the correct causes to observed effects. It is probable that research will eventually figure out what factors directly lead to lower morale, differences in ethnic representation, differences in instructional quality, and differences in students' motivation to learn. In the meantime, it is important to consider not "throwing the baby out with the bathwater." Grouping continues to be an effective format for instructing a narrower range of ability more appropriately. There is nothing in the research at present to suggest that not grouping by ability is more effective or appropriate for any level of ability or achievement.

Question Five: What might be the costs of not providing grouping for gifted learners?

Based on what the research says about the effects of grouping the gifted, the removal of opportunities for these students to learn at the pace and level of complexity with others like themselves may conceivably result in substantial declines in achievement and attitude toward the subjects being studied. With the current emphasis on the mastery of outcomes rather than coverage of content, gifted learners may receive less access to knowledge and process than they have had previously in special programs of enrichment and acceleration. This in turn may lead to an even more precipitous decline in national test scores than we have already been witnessing since the 1960s.

In Conclusion

Gifted learners need some form of grouping by ability to effectively and efficiently accomplish several educational goals, including appropriately broadened, extended, and accelerated curricula. They must be in groups so that their school curriculum may be appropriately broadened and extended. The pacing of instruction, the depth of content, and advancement in knowledge fields, which these students must have, cannot be effectively facilitated without a variety of ability-grouped arrangements. At the same time, means must be found to address the concerns of Oakes and George as well as to address the legitimate criticisms of tracking put forth by Slavin. Just as we readily acknowledge the complexity of the learning process, we must acknowledge that no simple solution will be found to remedy the complex issues surrounding ability grouped classes. One size does not fit all, whether that solution involves mixed-ability classroom conformations or ability grouping in one or many of its forms. Likewise, there are no easy answers to the questions raised here.

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