High, middle and low ability make equal progress during streaming
A preliminary study of Streaming across Year 6

Education Development Trust

Southbroom St James Academy

Author: Rebecca Owens
Email: bowens@trinityschooldevizes.dsat.org.uk

Purpose of the Research

To see if streaming has a positive impact on progress of all abilities of children. In 1997 the DFE suggested setting as a way to raise standards. In Effective Classroom Organisation in Primary Schools: Mathematics (2001), a study from the Institute of Economic and Social Research (IESR), concluded that mixed ability was preferable.

Steenbergen-Hu and colleagues (2016) conducted a meta-analysis of nearly 100 years' worth of education research that had looked at the use of ability grouping (placing students of similar skill and ability level into the same class) and the process of acceleration (where students are given tasks and materials usually given only to older children). Their meta-analysis screened many thousands of studies. They divided these into four groups:

- Between-class ability grouping in which students in the same academic year were divided into high-, medium- or low-level ability classes.
- Within-class ability grouping where pupils in the same classroom were taught in groups based on their ability levels.
- Cross-year subject grouping in which students in different year groups were combined into a single class based on ability.
- The grouping of children considered to be gifted in some way.

Their findings indicated that there were attainment benefits of within-class, cross-year and gifted grouping. However, there was no benefit in between-class grouping. The results were the same irrespective of academic level prior to being grouped. In relation to acceleration for learning entitled 'gifted', there were positive benefits on these pupils' grades with a level of attainment similar to that of older, non-gifted students.

Method

Participation
Three classes of 10 and 11 year old pupils took part in the study. This gave a sample size of 72 children.

Procedures
All children took a baseline test that gave them a scaled score. The children were then grouped into abilities and taught by a teacher for English or maths in the streamed class for a period of 8 weeks. English planning was planned by a booster teacher and was monitored and adapted for all groups by SLT (Senior Leadership Team). Maths was planned by a year 6 teacher and was monitored and adapted for all groups by SLT (Senior Leadership Team). All children were exposed to daily lessons in English and maths. Each lesson was one hour long.

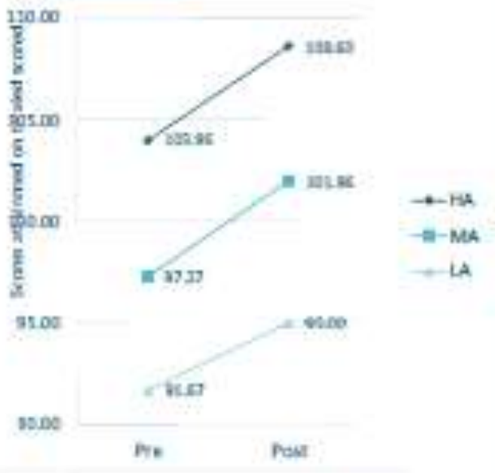
All children were also grouped according to their KS1 (Key Stage one) SATs results. This would determine the level that the child needed to get to by the end of KS2 (Key Stage two)

Results

Reading: All pupils made progress between pre- and post-tests (see graph right).

An initial Friedman's ANOVA suggested that there was no overall difference in progress rate (gain score) across the three ability groups (p = .230). This was followed by separate Mann-Whitney U-tests comparing each of the three group progress rates with each other. In all cases, the results were non-significant. This said, there was a moderately small non-significant negative effect on progress rate for the low ability group compared to the middle ability group (r = -0.19, p = .103) and a moderately small negative effect on progress for the high ability group compared to the middle ability group (r = -0.20, p = .058). There was no appreciable effect size difference between the high ability group's progress rate and that of the low ability group (r = 0.02, p = .291).

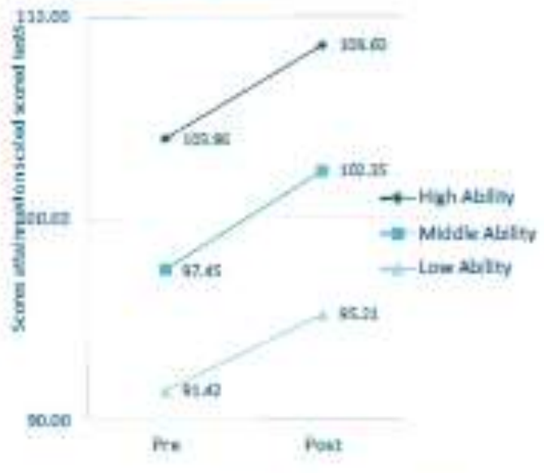
Figure 1: Pre- and post-test Reading scores for streamed groups



Maths: All pupils made progress between pre and post-tests (see graph right)

Again, an initial Friedman's ANOVA suggested there was no overall difference in progress rate across the three ability groups (p = .539). Followed by the separate Mann-Whitney U-tests comparing all three rates of progress with each other. In all cases the results were again non-significant. That said there was a small positive non-significant effect seen on the progress of the lower ability compare with the middle ability group (r= .05, p= .361). A small negative non-significant effect on the rate of progress for the high ability group compared with the middle ability group (r= -0.25, p=.198). There was a small non-significant negative effect on the rate of progress between the higher ability and lower ability (r=-0.17, p=.398)

Figure 2: Pre- and post-test maths scores for the streamed ability groups



Research Design

The study used a quasi-experimental (parallel group) design to compare the progress rates of three different ability levels in response to streaming:

- IV Level 1 – Higher ability (HA)
- IV Level 2 – Middle Ability (MA)
- IV Level 3 - Lower Ability (LA)

Progress rate was assessed by calculating gain scores from pre- and post-test results.

Limitations

The study used a relatively small sample size (n = 72) with 28 pupils in the high ability group, 25 in the middle ability group and 19 in the lower ability group and therefore the levels of significance may have been affected by this.

Also, during the intervention the Lower ability group had a supply teacher who changed 4 weeks before the post assessments were complete.

The Standard of teaching varied throughout the streamed groups this was also a limiting factor.

Conclusion

Although the results in this study need to be interpreted with caution because of the small sample size, the differences in effect size suggest that streaming was not beneficial for either the low or high ability groups, results that align with the most recent research into the effects of ability grouping (namely, that between ability grouping is unlikely to have a positive effect on attainment (Steenbergen-Hu, Makel and Olszewski-Kubilius, 2016). Although all groups made similar rates of progress. A further study with a control group of mixed ability children would allow a more detailed study and comparison between streaming and mixed ability classes.