

Aims and Rationale

- Examine the effects of ability setting on GCSE attainment in English, Mathematics and Science.
- The authors particularly wanted to determine whether setting effects progress in some subjects to a greater extent than others.
- A shortage in the amount of quantitative research since the introduction of the National Curriculum (Ireson *et al.* 2004)

Background:

- Raising standards has been a driving factor behind research in order to boost schools position on the league tables.
- Pressure from government to increase the amount of setting in schools despite a report from the Education Endowment Foundation (EEF) which found setting is detrimental to students in middle or low sets (Wintour, 2014)
- Conflict amongst findings in similar studies:
 - Gamoran and Mare, (1989) found higher achievement for students in tracking schools.
 - Hoffer (1992) found high track students benefitted while those in lower and middle tracks achieved worse than in ungrouped schools.
 - Argys *et al.* (1996) found that tracking was only detrimental to the low sets. This was supported by Lacey (1974)
 - Fogelman *et al.* (1978) found no difference in attainment between schools with setting and mixed ability classes.

Theory and Practice:

- **Positivist** paradigm using a quantitative study of grades achieved versus the amount of setting experienced and the set students were in.
- **Explanatory** research trying to link ability grouping with attainment.
- **Objective** research with bias accounted for and other factors controlled making the results valid.

Sample

Number of schools	Level of setting
15	Low – all mixed
15	Partial
15	High

6000 students

Attainment collected at end of KS3 and GCSE
All OFSTED good or satisfactory
Statistically more disadvantaged in the all mixed schools

Methodology

- Multilevel modelling used allowing student parameters and school level parameters to be investigated at the same time (Rasbash *et al.* 2000).
- Collected data on gender from questionnaires
- Collected attendance data and ethnicity from the schools.
- Grades were converted to a numeric scoring system using matched data sets from the QCA which the authors describe as a “commonly used scoring system”.
- Any subjects where more than one paper was set were averaged.
- Scale used to indicate the level of setting experienced by students with 0 = completely mixed and +1 for setting experienced each year.
- Under representation of low ability because they might not be entered or may have left the school, these were identified as students with a level below 4 in year 9. There were approximately 130 – 170 students with no GCSE which equates to around 20%.

Findings:

- When gender, prior attainment, social disadvantage and attendance were controlled there was no effect of setting on attainment.
- When looking at effect of the set students were placed in the authors found that students with the same key stage 3 results achieved higher in higher sets.
- At level 4 this was 1.5, 0.4 and 0.7 grades difference in mathematics, English and Science respectively.
- The overall advantage was just less than 1 GCSE

Strengths

- Accounted for socioeconomic factors that affect attainment so that only the effect of which set the students were in was being investigated.
- Large sample size will allow for a generalisation of results particularly because the different levels of setting have been equally represented. Cohen *et al.* (2011) suggest a minimum sample size of 30 in order to get reliable results which can be statistically analysed.
- Published in a large journal with an excellent reputation which suggests the article has been peer reviewed which should increase reliability.
- Large sample size used in comparison to similar studies (William & Bartholomew, 2004), although there is contention about what constitutes a large enough same size and that large sample sizes are not necessary for research to be valuable or reliable (Punch & Oancea, 2014).
- Findings are consistent with similar research (Hoffer 1992; Lacey, 1974; William & Bartholomew, 2000) suggesting reliability (Punch *et al.*, 2014).

Limitations

- High attrition rates mean instability in the data and generalisations should be drawn with caution. However, the authors minimised impact to their data using a range of statistical techniques and published the standard deviations alongside key figures in order to highlight any discrepancies.
- There were no outstanding or special measures schools involved in the study, how well could we extrapolate the data to include these schools?
- Authors did not observe the quality of differentiation in the different school, they assumed being a good school meant good pedagogy. They needed to eliminate this as a source of error in their data as other key papers have found it to have a significant impact (Boaler *et al.* 2000).
- There was also no mention of the demographic location of the schools used and so the reader must make their own assumptions. It could make generalisation unreliable if all school were concentrated in one area, for example London and the surrounding boroughs.

References:

- Argys, L., Rees, D.I. & Brewer, D.J. (1996) Detracting America's schools: equity at zero cost? *Journal of Policy Analysis and Management*, 15(4), 623-645.
- Cohen, L., Manion, L., & Morrison, K. (2011) *Research Methods in Education* (7th Ed.) Abingdon, Oxon, UK: Routledge.
- Fogelman K., Essen, J. & Tibbenham, A. (1978) Ability grouping in secondary schools and attainment, *Educational Studies*, 4(3), 201-212.
- Gamoran, S. & Mare, R.D. (1989) Secondary school tracking and educational inequality: compensation, reinforcement or neutrality? *American Journal of sociology*, 54(1), 89-105.
- Hoffer, T.B. (1992) Middle school ability grouping and student achievement in science and mathematics, *Educational Evaluation and Policy Analysis*, 14(3), 205-227
- Ireson J., Hallam, S. and Hurley, C. (2004) What are the effects of ability grouping on GCSE attainment? *British Educational Research Journal*, 31(4), 443-458.
- Lacey, C. (1974) Destreaming in a 'pressured' academic environment, in: J. Eggleston (Ed.) *Contemporary research in the sociology of education* (London, Methuen).
- Punch, K.F. & Oancea, A. (2014) Introduction to Research Methods in Education (2nd Ed.) Sage Publications ISBN: 978-1-4462-6073-9
- Rasbash, J., Goldstein, H., Browne, W., Yang, M. & Woodhouse, G. (2000) The MLwin Command Interface, Institute of Education. Accessed from: <http://seis.bris.ac.uk/~frwib/materials/comman.pdf> [30/10/15]
- William, D. & Bartholomew, H. (2004) It's not which school you're in that matters: the influence of ability-grouping practices on student progress in mathematics, *British Educational Research Journal*, 30(2), 279-293.
- Wintour, P. (2014) Compulsory setting: schools face being forced to separate pupils by ability, *The Guardian* (03/09/15)