



## DATA INSIGHTS

# Investigating the effects of class composition and class size on pupils' attainment in Scottish primary schools.

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## OVERVIEW

Composite classes (also known as “multi-grade classes”) combine pupils from adjacent years into a single classroom. This classroom structure is widespread yet understudied. Quirks in the Scottish institutional structure allow us to clearly identify the casual effect of composite classes on pupils' attainment. We also study the effects of class size which is an alternative policy lever that has been shown to affect attainment.

## WHAT WE DID

We linked administrative data from several different sources, including the Scottish Pupil Census (SPC) along with pupil attainment data from teacher-based assessments as part of the Curriculum for Excellence (CfE) framework. We made the code used for the data linking available via GitHub as well, shown here: <https://github.com/bodanieli/educationscotland/>.

We then used the linked data to analyse the effects of composite classes and class size on pupils' attainment. To do this, we utilised the fact that some schools create composite classes in a quasi-random fashion based on the predictions of a school planner algorithm.

## WHAT WE FOUND

We found that:

- For Primary 1 students (P1 pupils), being enrolled in a composite class with older peers leads to an improvement in both numeracy and literacy performance.
- Every additional more mature peer raises the probability of a younger P1 pupil performing at a higher level in numeracy (increased by 0.8 to 1.1 % points), and also a higher level in literacy (increased by 1.3 to 1.5 % points).
- These benefits do not seem to occur at the expense of the older students.
- There is no evidence to suggest that changes in class sizes alone, would drive these gains.
- Our research shows that composite classes can improve the educational performance of younger pupils whilst also allowing administrators to save on the number of classrooms and therefore reduce costs.

***A short summary of all our findings can be read in our attachment [here](#).***

***The full report can be read [here](#).***

## WHY IT MATTERS

Composite classes are widespread and yet up until now little was known about their effects on attainment. The few available studies focus on rural contexts in Norway (Leuven and Ronning, 2014) and Italy (Barbetta et al, 2019; Checchi and De Paola, 2014).

Our study showed that it is feasible to link individual-level pupil census data to attainment information. We demonstrated that such linked data are a powerful source for impactful research.

## FURTHER INFORMATION

This article summarises the research conducted as part of the Nuffield Foundation grant EDO/43743.

The research team includes: [Daniel Borbely](#) (University of Dundee); [Markus Gehrsitz](#) (University of Strathclyde); [Stuart McIntyre](#) (University of Strathclyde); [Gennaro Rossi](#) (University of Strathclyde) and [Graeme Roy](#) (University of Glasgow).

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