Note 8.3 – Further Details of the Pupil Attitudes to Learning and School study

The pupil attitudes to learning and school (PALS) study was conducted in the West Midlands region of England in 2014-2016. Data were collected from over 7300 pupils in 24 secondary schools (age 11-18) over the course of two years. Pupils completed a PALS survey consisting of over 50 attitude statements and several open-response items. Items on the survey were curated and developed from several other surveys[1] relating to character, justice and fairness, learning, learning attitudes and wellbeing. All PALS statements were rated using a 5-point Likert Scale. One interesting part of the analysis and design was that the changes over time were assessed in relation to pupil age-year cut-offs. Pupils born on the 1st September have had a whole year less of schooling than pupils born one day before on the 31st August. This allows the separation of effects linked to age and maturity from those relating to the additional year and cohort membership (using something called a 'regression discontinuity design', which looks for breaks in an age-score trend line).

Factor Analysis

One analytically interesting aspect of the study was something called a 'factor analysis' which looks for groups of attitude statements that tended to be answered in a similar way (with an 'agree' for one statement in the group being predictably associated with either an 'agree' or 'disagree' for other statements in the group). Overall, the analysis identified[2] three factors in the responses, collectively explaining about half of the overall variation in children and young people's responses. We briefly describe each of these in turn, below:

▪ **School Climate** – A factor that was loosely described as 'School Climate' accounted for about 25% of the variation across the overall PALS questionnaire, drawing on 34 attitude statements out of 54. School climate is a broad term used to describe the overall experience and feeling one gets in a school, influenced by social, academic and physical aspects of the school (Loukas, 2007). In the PALS study, statements in this group related to school ethos, teacher quality, quality of curriculum, relationships with teachers, and pupil conduct/behaviour at the school. In all statements in this group, there were themes of belonging, connectedness, positive and purposeful ethos, and a safe and friendly environment, but connected to a wide range of apparently different aspects of the school.

---

[1] University of Birmingham Jubilee Centre Virtue Measure – School Ethos Section; EU Socrates Programme – Justice/Fairness items (Gorard, 2012); Ofsted pupil voice surveys; ISEP Pupil Attitude Questionnaire (Thomas et al., 2000); The LOSO Well-Being Questionnaire (Van Damme et al., 2002).

[2] This used what is known as a principal components analysis. There isn't the space to go into the technical details of this or the statistical indicators of model fit and so on. We are also skirting over questions about factor loadings and the specifics of the individual items. Hopefully we provide just enough detail here to support our general point about there being clusters of attitudes, and these warranting further study.

- ***Learning Attitudes and Beliefs*** – The PALS 'Learning Attitudes and Beliefs' factor accounted for about 10% of the variation. It included 13 statements relating to academic ability and success in learning, engagement, effort and motivation, and interest and enjoyment of lessons. Unsurprisingly, there are strong correlations between pupils' self-beliefs about their own ability, learning and their self-reported motivation and enjoyment of lessons.
- ***Friends and Social Support*** – The third factor, explaining about 10% of the overall variation in the survey, was labelled as 'Friends and Social Support'. There were 7 attitude statements in this group which related to pupils' relationships with their peers, the presence of social conflict, friendship and its absence. There was also a more general statement, 'I am often unhappy at school', which was more closely linked with the statements about friendship and social connection than the other two areas. This latter finding was also reflected in the analysis; When looking for students who had very low averages across all attitude statements, social aspects were key drivers of general responses. It was issues like bullying, isolation, conflict and lack of belonging that, often poignantly, stood out in the accounts of children and young people with the most negative attitudes and experiences of learning and school.

We found that the Friends and Social Support factor was the most independent of the three. When looking at correlations between the factor scores there was:

- a high correlation between *School Climate* and *Learning Attitudes and Beliefs* ($r = 0.87$),
- a moderate correlation between *School Climate* and *Friends and Social Support* ($r = 0.62$),
- a smaller correlation between *Learning Attitudes* and *Friends and Social Support* ($r = 0.38$).

More concretely, we conclude that there are many children and young people who feel they have strong friendships and feel that the social aspect of school is positive – but have poor attitudes to learning and low academic self-belief and motivation; conversely, there are children who will say that they enjoy learning, and are successful academically, but find school to be a lonely or socially-stressful environment, with little social support.

Regression Discontinuity Analysis

The regression discontinuity (age-year cut off) analysis revealed a consistently *negative* added-year effect in addition to a general decline associated with maturity. In other words, 1) attitudes to learning and school generally declined as students got older and 2) having an older peer group and an extra year of schooling (i.e., being born on the 31st August rather than the 1st of September) makes attitudes fall further still. Against this backdrop, the analysis found that age-within-year effects were *positive* for social and academic self-concept items and inconsistent elsewhere. That is, older children within a given cohort (e.g., born in September) tend to have higher self-beliefs and more positive attitudes about the social aspect to school.

An overview of the results is provided in the figure below. The PALS analysis was carried out using 6 groups of attitude statements rather than the factors mentioned above (merging 2 of the original 8 sections of the survey). In each of the six groups, it is possible to see results for 2014 and 2015 (the survey ran for two years). There is a 'slope' within each year group, which is the age-within-year effect (the effect of being the oldest or youngest) and a 'step' which shows the effect of having had one more year of schooling and being a member of a cohort that is one year older. Note that the 2014 results were based on a bigger sample, due to dropouts (and presumably selection bias within who dropped out) in the second year.

School Effects

Looking at whether there was a school effect on pupil attitudes to learning and school (using a form of contextualised value-added measure), it was clear that most of the variation was at pupil level. In terms of *raw* (uncontrolled) differences in school mean attitude scores, there were significant differences in all areas apart from the 'Friends and Social Support' scores. In some cases, mean differences of over 0.5 between the lowest and highest schools. But when controlling for pupil background factors (including prior attainment), the differences between schools were less apparent to the point of being negligible. The estimated school effect was 3.3%. Even schools with the most positive attitudes overall had numerous pupils reporting highly negative attitudes and *vice versa*.

References

Gorard, S. (2012). Experiencing fairness at school: An international study. *International Journal of Educational Research*, *53*, 127-137. https://doi.org/10.1016/j.ijer.2012.03.003

Loukas, A. (2007). What is school climate. *Leadership compass*, *5*(1), 1-3.

Thomas, S., Smees, R., MacBeath, J., Robertson, P., & Boyd, B. (2000). Valuing pupils' views in Scottish schools. *Educational Research and Evaluation*, *6*(4), 281-316.

Van Damme, J., De Fraine, B., Van Landeghem, G., Opdenakker, M.-C., & Onghena, P. (2002). A New Study on Educational Effectiveness in Secondary Schools in Flanders: An Introduction. *School Effectiveness and School Improvement*, *13*(4), 383-397. https://doi.org/10.1076/sesi.13.4.383.10285

Figure – Pupil attitudes to learning and school by age and area