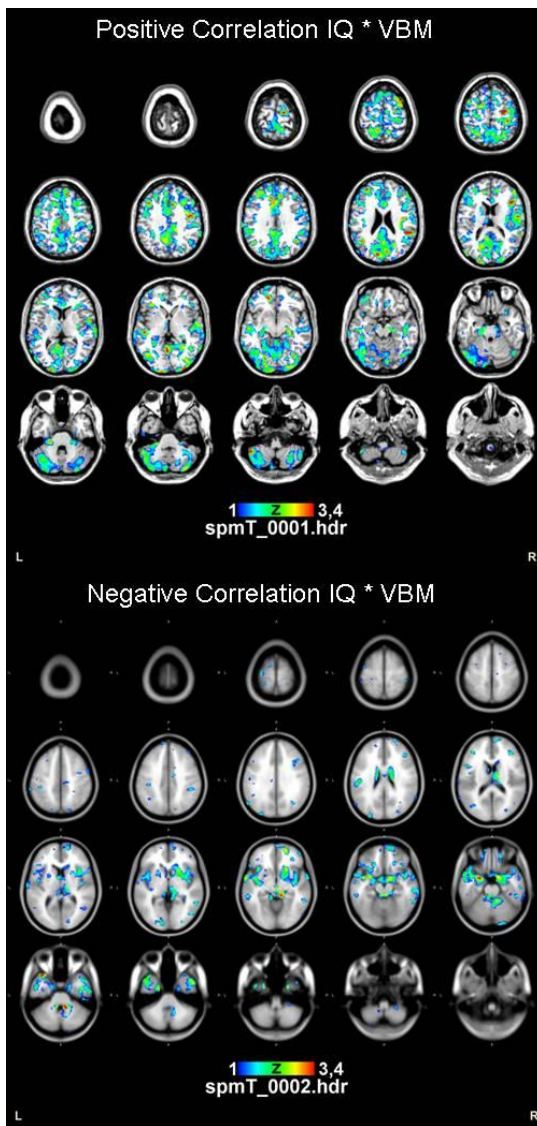


Supplement

Figure S1 VBM analyses – additional maps



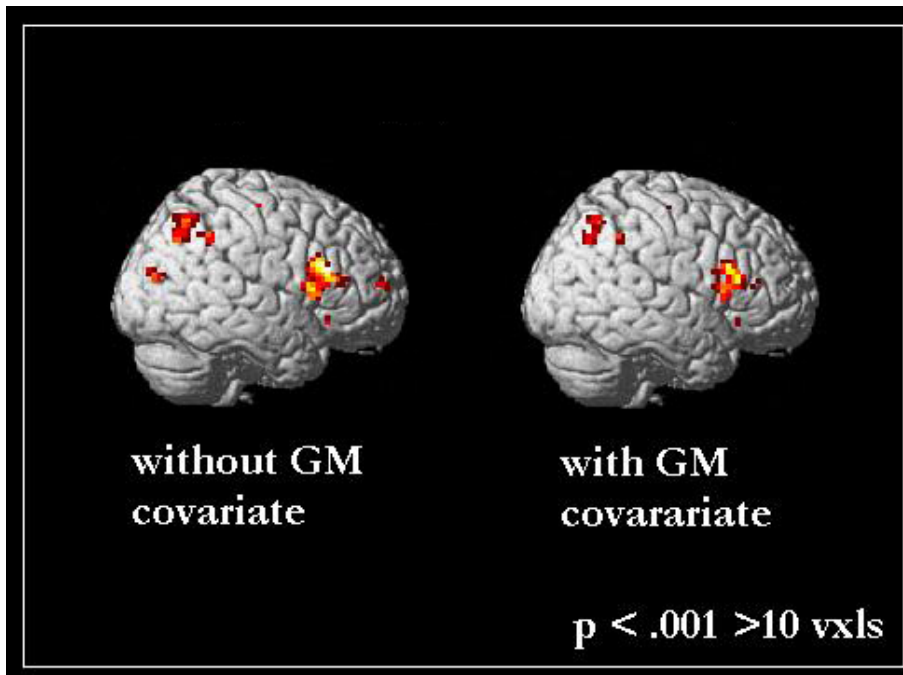
VBM results showing regions with positive and negative correlations with grey matter volume at different threshold levels. Images are overlaid on axial slices of an MNI standard brain.

Additional tests for relation local GM volume and functional activity

Given the grey matter differences between the education groups, we tested whether functional activation differences could be explained by local changes in grey matter

volume. Biological Parametric Mapping (BPM; Casanova et al., 2007) was used to perform regression analyses where voxel-specific gray matter volume was included in the regression as a nuisance variable. The dependent variable in BPM multiple regressions were the imaging variable of primary interest, in this case the individual contrast maps [pos (alt) > pos (corr)] of each participant. Independent variables included one other imaging modality (modulated gray matter maps from the VBM analysis) and one non-imaging covariate (IQ). Maps examining the relationship between fMRI activity and IQ included VBM as covariate in the regression. Significant BPM findings represent areas with IQ-related BOLD differences that cannot be accounted for by local age-related gray matter volume changes. The resulting activation map in Supplementary Figure 2 suggest that although there are IQ related differences in cortical gray matter, these do not by themselves are able to completely explain the IQ related changes in functional activity.

Figure S2 – BPM results



Showing the results of the whole brain regression on the [pos(alt)>pos(cor)] contrast with IQ, with and without grey matter as a covariate using BPM.