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Gini-like Coefficients for Differences in Collections of Distributions: Studying the Progress of Equality of Opportunity in the German Education System

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National concern surrounding Germany's poor PISA results in 2002 prompted major reforms in its education system involving substantial changes in curricula and in the way students were taught, tested and tracked. The policy, which took over 5 years to implement, was intended to alleviate the dependence of child academic achievements on their parental circumstances and promote equality of opportunity. From a measurement perspective the reforms meant that, although comparable within cohort, student grades before and after the intervention were no longer cardinally comparable, rendering standard counter-factual comparison techniques no longer viable since they

require common cardinally measurable domains pre and post intervention. Here, new classification and measurement techniques are introduced and employed which facilitate comparison across otherwise incomparable domains. Fundamental change in the dependency structure of child attainment distributions on parental circumstances were detected with some qualified advancement in equality of opportunity in capability acquisition.