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Secondary School Gain Metrics, By Combining Standardised Tests with Graduation Metrics

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Abstract

Current gain metrics (value-add, percentile growth) are methodologically complex and not intuitive for non-educators. Pioneered by the author, percentile shift analysis (PSA) converts any standardised testing to percentiles, with subtraction analysis capturing how student core-skills from as early as primary school are ultimately translated into secondary graduation metrics. Because PSA captures ranking shift, rather than academic gain, there is no need for testing to have a common scale. In fact PSA is arguably a more applicable measure for those pursuing rationed places at university. Australian results from 22 graduating Queensland independent school cohorts will be presented in a workshop format. This will enable educators from any nation to perform a similar analysis on their domestic data; including mean school gain calculation, quantifying academic selection and depletion, and the relative impact of numeracy and literacy domains. A novel compositional effect is proposed, based on the findings that highest-gain students occupied the dominant academic tier within their graduating cohort, while those academically isolated achieved no significant mean gain. These findings challenge Marsh's "big fish little pond effect" and the notion that students pursue the most academic school they can access. School tuition cost-benefit is also calculated, and found to be limited, relative to the government sector, once students with comparable academic skills are compared.

Keywords: Gain; Numeracy; Cost-Benefit; Assessment; Quality