

14 - 16 August 2026

Berlin , Germany

National Income and Teacher Professional Development: An Analysis of Post-Pandemic Change Across 40 Education System

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Abstract

Economic capacity and digital infrastructure have each been linked to teacher professional development and instructional practice in prior research, though rarely within a single post-pandemic framework testing which macro-resource aligns with which outcome domain. This study examines whether pre-pandemic GDP per capita is associated with 2018-2024 change in teaching practices or professional development differently across Nordic and non-Nordic systems. Using TALIS data from 40 education systems (N = 414,268 teachers), country-level regression models with HC2-robust standard errors tested an exploratory cross-moderator design spanning all macro-moderator-by-outcome-domain combinations, alongside the pre-specified confirmatory hypotheses. The confirmatory hypothesis that GDP per capita moderates change in teaching practices by Nordic status was not supported ($p > 0.05$). Exploratory analysis instead found GDP per capita associated with Nordic-status differences in professional-development breadth: core competencies (PDTCORE: $b = 0.095$, $p = 0.002$, 95% CI (0.038, 0.151)) and overall breadth (PDTOPICS: $b = 0.079$, $p = 0.027$, 95% CI (0.010, 0.148)). Higher pre-pandemic GDP co-varied with larger post-pandemic professional-development gains among Nordic systems. As a cross-sectional, non-experimental design, causal direction cannot be established. This exploratory finding invites confirmatory replication.

Keywords: Cross-National Comparison; Economic Resources; Exploratory Analysis; Nordic Education Systems; Professional Development