Mechanisms of Matthew effects in social investment

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Social Policy department seminar
28th October 2020
Roadmap

The problem: social investment vs the Matthew effect

A potential solution: specialization as a comparative advantage?

Empirical design

Findings 1: no more specialisation?

Findings 2: changing access to signals of success

• Affiliation

• Skill signals

Conclusion: a Matthew Effect – for increasingly few?

Implications: re-inforcing signals of specialisation
Traditional view: Education ≠ Social policy

A nation’s educational effort, especially at the higher levels, is chiefly a contribution to...enhanced mobility for those judged to be potentially able or skilled

- Wilensky 1975

Contemporary view: 
Education = social investment

Building on:
Human capital theory
Skill-biased technological change

“The general idea is that we should value education as a public good. We all benefit when the people around us are more educated…” (Ford, 2016, p. 263)

But…

what if, in this social investment paradigm, the “rich”
(the skilled, those with access to skill development)

just get “richer”
(get more skilled, get more access to skill development)

i.e. a ‘Matthew effect’

-> crisis in ‘meritocracies’
Can policy influence the balance?

**Public good**
- Equaliser
- Multiplier
  - e.g. gaps reduce during primary education (Bradbury et al.)

**Positional good**
- Differentiator
- Zero-sum
  - e.g. effectively maintained inequality (Lucas)

Credential design

GRADING SYSTEM

01 + 02 + 03 + 04 + 05 = ATAR

100% Of Best Four Subjects + 50% Of Weakest Subjects = ATAR
From sorting and stratification...
to specialization as comparative advantage?
Question

As higher education expands, do more of ‘the rest’ opt for vocational education – as a means to gain comparative advantage?
Question & Puzzle

As higher education expands, do more of ‘the rest’ opt for vocational education – as a means to gain comparative advantage?

Since we observe no consistent relationship between HE expansion and upper secondary vocational expansion, what explains the variation?
Empirical design

Following Goertz (2017) on multimethod research design

**Case selection**: most similar, most different -> more leverage to identify explanations

**Data collection**: historical trends in secondary, upper secondary and tertiary enrolment across sub-jurisdictions (states); 102 interviews; parliamentary records; database of media articles

**Data analysis**: developing and testing multiple explanations. Validity rests on consistency and credibility of final explanation against totality of data

Y axis: trend of upper secondary vocational enrolment

X axis: secondary education structure (comprehensive vs tracked+vocational)
**But measurement error...**

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Percentage point difference between upper secondary vocational share (L3V / L3) amongst all ages vs amongst 15-19 year olds, select OECD countries.
...and other challenges to the initial premises

**Germany**

Abitur as the **new normal**: Share of 20-24-year-olds holding a study qualification rose from 26% in 1995 to **53%** in 2017

Apprenticeship as a **post-18 activity**: Share of apprenticeship **under 18** fell from 49% in 1995 to **27%** in 2016

**Austria**

**Over half** of higher education entrance now granted through **vocational schools** (BHS): 53% of all Matura qualifications were granted by BHS in 2017 - but this is a long-standing situation

Stability in apprenticeship share but rise of **state-provided training**: From 1995-2016 the number of companies offering apprenticeship training fell by over a quarter

**Australia**

Vocational enrolment increasingly dominated by Vocational Education and Training in schools (VETiS): by 2017, **47%** of the senior secondary school cohort was enrolled in a **VETiS course**

VET for young people is not occupationally-specific: at the level that represents entry to a vocational (cert III), the most popular field is **Sports & Recreation**; the highest completion rate is in **Office studies**, at **38%**

**New Zealand**

Vocational enrolment is low: Vocational enrolment for 15-19-year-olds is **half** of what is implied by UOE

Vocational learning is falling: In the past ten years, the number of vocational units taken as part of the school-leaving certificate has **halved**
Conclusions from descriptive data

Loss of vocational specialization at the secondary level

-> much labelled ‘vocational’ is not really occupationally specific

The share of ‘true’ secondary vocational is explained by changes in tracking

-> no one ‘choosing’ upper secondary vocational education

   -> logic of specialisation no longer operating at upper secondary

   (in these cases...
Two common trends in policy choices and social processes which are better explanations for education backlash / crisis in meritocracy:

Across cases, the emerging **opportunity and incentive structure** advantages the already advantaged - through opportunity for:

Affiliation + Skill signals


Changing conditions for affiliation, across cases

Germany, Australia, NZ; less so Austria: **increased school choice** at lower secondary

-> more sorting

-> expansion of school types with academic pathways

*But* increase in choice is **limited** and **stratified**: by attainment, class, and ethnicity.

-> **quasi-tracked** systems: more advantaged, higher-attaining students have choice (i.e. can **affiliate**); others do not.
Increased school choice in Germany…

Germany: 8th grade enrolment by school type, 1998-2017. 8th grade is a middle year of secondary education, prior to the earliest stage in which some students may leave for apprenticeships, and after the orientation phase used in some states.

Why they end up in my school rather than any other? That’s a good question. **It’s basically where you live.** When you get born in this kind of district you go to a kindergarten in this district and then to a primary school and then you go to my secondary school. I don’t think the reputation’s very good. There are three pretty bad reviews on google about my school. So of course if I would be a parent I wouldn’t send them to this school.

… like 2km from my school there is a kindergarten, and I was talking to those teachers there, and basically all the children there are white. …people notice the area is still cheaper, and there’s more green areas and freedom for children to play and grow up, and so they move there. …

So there is a different school in the neighbourhood, similar to my school, and rumours say they don’t accept everyone. So for example we just got a new student in my class and she’s a very challenging student, she dropped out of another school so they moved to this area, and she applied to this other school, and they said they’re full. And **my school is accepting everyone basically.**

- Hamburg comprehensive school teacher
The *Hauptschule* has become a problem of course, regarded as a school for the low achievers, for migrant populations, all other problematic parts of the population, and the broad middle class says that’s not an option for our kids. And *Realschule* has started to show similar signs, so you’re left with Gymnasium as the mainstream option, and that drives the qualification people go for.

- Policy advisor in NRW, Germany
New school choice policies in 1989-1991

Expansion of ‘high decile’ schools (schools with higher SES students)

A lot left behind…
## Enhanced advantage

<table>
<thead>
<tr>
<th></th>
<th>Decile 1-3</th>
<th>Decile 4-7</th>
<th>Decile 8-10</th>
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<tbody>
<tr>
<td>1997 school leavers starting at a tertiary education institution in 1998</td>
<td>26%</td>
<td>40%</td>
<td>54%</td>
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<tr>
<td>2018 year 13 students gaining NCEA with University Entrance</td>
<td>27.6%</td>
<td>47.6%</td>
<td>65.3%</td>
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Sorting in Australia

Expansion of “non-government” schools options (Catholic and Independent schools)

Loss of higher income students

Widened disparities of income, SES, and attainment between schools

Lower income students more concentrated in government schools (“residualization”)
## Enhanced advantage

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<tr>
<th></th>
<th>Government</th>
<th>Catholic</th>
<th>Independent</th>
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<tr>
<td><strong>LSAY 1995</strong></td>
<td>27.9%</td>
<td>45.7%</td>
<td>55.2%</td>
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<tr>
<td>cohort studying</td>
<td>(21.0 – 42.6)</td>
<td>(39.8 – 54.4)</td>
<td>(41.0 – 66.2)</td>
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<td>for a Bachelors’</td>
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<tr>
<td><strong>LSAY 2009</strong></td>
<td>38.1%</td>
<td>55.8%</td>
<td>63.2%</td>
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<tr>
<td>cohort studying</td>
<td>(25.0 – 58.0)</td>
<td>(40.9 – 71.3)</td>
<td>(36.5 – 77.1)</td>
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<tr>
<td>for a Bachelors’</td>
<td>degree in 2013</td>
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Values in brackets = share of lowest and highest socioeconomic quartiles reaching that outcome, from that school type.
De-tracking -> more competition?

**Competitiveness** at school experience (Index of competition, PISA 2018) in relation to an indicator of **tracking** (between-school variation in performance in Science, PISA 2015)

Less tracking -> more competitive
Changing access to skill signals, across cases

Reduction in differentiating assessments or reporting

-> **Weaker** signals for **lower** performing students

More centralized assessments for HE entry

-> **Strengthening** of signal for **higher** performing students

More **competitive**

-> winner takes all systems?
<table>
<thead>
<tr>
<th>Country</th>
<th>Key Events</th>
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<tr>
<td>Australia</td>
<td>1997: reform of NSW Higher School Certificate to encompass all upper secondary learning</td>
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<td>2008: First year of standards-based NAPLAN testing (English, Math, Science in grades 3, 6, 9)</td>
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<td>2009: Council of Australian governments target of 90% attainment of “Year 12 or equivalent” by 2015</td>
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<td>New Zealand</td>
<td>2002: NCEA introduced in competency based mode, combining ‘achievement’ and ‘unit’ standards</td>
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<td>2005: Complaints about reliability of NCEA</td>
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<td>2012: Better Public Services (BPS) target for 85% attainment at NCEA Level 2</td>
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<td>Germany</td>
<td>2003: KMK approval of first national standards in German, Math, English/French</td>
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<td>2006: benchmarking assessments against national standards in grades 3 and 8</td>
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<td>2009: national standards for the Hauptschulabschluss as an interim qualification</td>
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<td>2010: (re) abolition of ‘top notes’ in NRW</td>
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<td>Austria</td>
<td>2003: Initiation of a low-profile project to develop national standards in German and Math (grades 4 and 8) and English (grade 8)</td>
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<td>2008: Founding of BIFIE, responsible for educational monitoring and standards development</td>
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Efforts to equalize attainment -> **weaker signal**
Final exams are more centralized -> **stronger signal**

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<tr>
<td>2017: Queensland final state set to adopt the Australian Tertiary Admission rank and increase external assessment</td>
<td></td>
<td>2007: KMK agree new nationwide standards for central Abitur subjects (German, Math, English/French) (implemented from 2012)</td>
<td>2013: Zentralmatura in AHS; introduced in the BHS 2014</td>
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Loss of signals for some; stronger signals for others

The information on social skills such as behavior, diligence or order would make it easier for companies to give young people with bad grades a chance at a training place.

- DIHK (German Chamber of Commerce) President, commenting on a DIHK survey with employers to Die Zeit, 2012)

the scholarship exam …is marked on a standards-based assessment first then ranked heavily, so you might get an 8 but then suddenly 8s turn into 4s, because of where everyone is, but the irony is that was sort of the system that saved it.

- New Zealand school teacher
Increase in *competition*

Through:

- Inclusive qualification frameworks: all outcomes / results are comparable (commensurable)

- Centralized assessments
  - More credible (can support more high stakes judgments)
  - More granular (distinguish fewer winners)

The significance of centralized assessment

Less advantaged: differentiated by teacher report cards (vocational option)

More advantaged: differentiated by credential and occupational specialty (comparative advantage (hybrid option))

differentiated by academic credential (academic option)

Without centralized assessment
The significance of centralized assessment

- Less advantaged
- More advantaged

- Differentiated by teacher report cards
- Differentiated by academic credential
- Differentiated by credential and occupational specialty

- Vocational option
- Academic option
- Comparative advantage (hybrid option)

Without centralized assessment
The significance of centralized assessment

With centralized assessment:

- More advantaged: aims for academic option, differentiates by scoring highly.
- Less advantaged: no good option to differentiate.

Aims for school-leaving credential:
Final key factor: Predictability

Today, students can find out exactly what they need to know for the Abitur through the respective ‘Obligatory’ and can prepare themselves for the examinations in a targeted manner. According to my observation, pupils today are much better prepared for the oral exam (as a general requirement) than in my school days – with corresponding results.

- Zeitonline commentator, 2017
Conclusions

Despite reorganization towards more comprehensive systems, there is still a strata of schools serving students with lower resources or lower prior attainment, who do not have opportunity to access skill signals.

Through centralization/commensuration, system structures have become more competitive and more predictable.

- relatively more opportunity and incentives for the top-performing students and/or those with the most family resources to access the best preparation.

- Matthew Effect and crisis of meritocracy.
Implications

School choice tends towards stratification by attainment and future pathways -> quasi-tracking

If quasi-tracking is inevitable -> need for equity policies at points of selection into further opportunities to learn (e.g. contextual offers, affirmative action)

Education needs to provide formal skill signals - otherwise stakeholders rely on informal ones (such as status of high school, class, ethnicity, or gender)

Could better skill signals help to create specialization rather than stratification?