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Abstract

The literature on achievement inequality has recently started to focus on the dynamics of the socio-economic achievement gap in cognitive abilities. The main findings come from research in the U.S. revealing that the 90th/10th income achievement gap has widened 50% in the last 30 years. This chapter aims to investigate whether there are patterns in the evolution of the achievement gap from a comparative perspective. Using 15 years of data in 32 countries from the Program for International Student Assessment (PISA), I find that there is considerable variation in the way in which the gap between the average score of students above (and at) the 90th percentile and below (and) the 10th percentile is evolving. The prime examples come from the U.S. and Germany closing at about 50% and 30% in the last 15 years while France is widening at a similar rate. I find that curricular tracking and vocational enrollment explain 40% of the variance in the achievement gap between countries and show that the relationship is conditioned by a strong interaction. Low curricular tracking is associated with a small achievement gap, whereas high levels of curricular tracking is associated with wide achievement gaps. However, once tracking is coupled with high vocational enrollment this can remedy the potential adverse effects and reduce the gap by .6 standard deviation. I use simulations to show that switching to less curricular tracking can help decrease a country's SES gap by about 10% while switching to more tracking would increase the achievement gap by about 51% percent.

Keywords

academic achievement, education inequality, school autonomy, international comparison

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The Article Header Information

YAML header:

```
output:
  rticles::sim_article:
    keep_tex: TRUE
```

Configure the YAML header including the following elements:

- title: Title
- runninghead: Author last names, use *et al.* if there are three or more authors.
- author: List of author(s) containing name and num
- corrauth: Corresponding author's name and address.
- email: Correspondence email
- abstract: Limited to 200 words
- keywords: Keywords for the article
- bibliography: BibTeX .bib file
- bibliographystyle: sageh or sagev
- classoption: options of the sagej class

Remarks

2. bibliographystyle
3. classoption
4. Keywords are separated by commas.

The Body of the Article

Mathematics

Use mathematics in Rmarkdown as usual.

Figures and Tables

Figures are supported from R code:

```
x = rnorm(10)
y = rnorm(10)
plot(x, y)
```

... and can be referenced (Figure 1) by including the `\\label{}` tag in the `fig.cap` attribute of the R chunk: `fig.cap = "Fancy Caption\\label{fig:plot}"`. It is a quirky hack at the moment, see [here](#).

Analogously, use Rmarkdown to produce tables as usual:

```
if (!require("xtable")) install.packages("xtable")
```

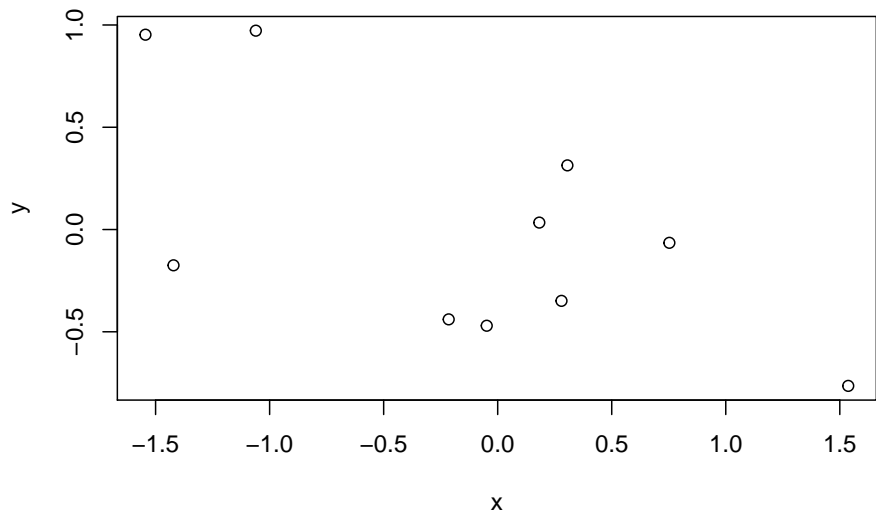


Figure 1. Fancy Caption

```
## Loading required package: xtable

xt <- xtable(head(cars), caption = "A table", label = "tab:table")
print(xt, comment = FALSE)
```

	speed	dist
1	4.00	2.00
2	4.00	10.00
3	7.00	4.00
4	7.00	22.00
5	8.00	16.00
6	9.00	10.00

Table 1. A table

Referenced via [1](#). You can also use the YAML option `header-includes` to includes custom \LaTeX packages for tables (keep in mind that `pandoc` uses `longtables` by default, and it is hardcoded; some things may require including the package `longtable`). E.g., using `ctable`:

```
header-includes:
```

– \usepackage{ctable}

Then, just write straight-up L^AT_EXcode and reference is as usual (\ref{tab:ctable}):

```
\ctable[cap = {Short caption},
        caption = {A caption for this table.},
        label={tab:ctable},]
{cc}
{
  \tnote[$\ast$]{Footnote 1}
  \tnote[$\dagger$]{Other footnote}
  \tnote[b]{Mistakes are possible.}
}{
  \FL
  COL 1\tmark[a] & COL 2\tmark[$\ast$]
  \ML
  6.92\tmark[$\dagger$] & 0.09781 \\\
  6.93\tmark[$\dagger$] & 0.09901 \\\
  97 & 2000
  \LL
}
```

It is also possible to set the YAML option `longtable: true` and use markdown tables (or the `knitr::kable` function): `knitr::kable(head(cars))` produces the same table as the `xtable` example presented before.

Cross-referencing

The use of the Rmarkdown equivalent of the L^AT_EXcross-reference system for figures, tables, equations, etc., is encouraged (using [`@<name>`], equivalent of `\ref{<name>}` and `\label{<name>}`). That works well for citations in Rmarkdown, not so well for figures and tables. In that case, it is possible to revert to standard L^AT_EXsyntax.

Double Spacing

If you need to double space your document for submission please use the `doublespace` option in the header.

Bibliography

Link a `.bib` document via the YAML header, and bibliography will be printed at the very end (as usual). The default bibliography style is provided by Wiley as in `WileyNJD-AMA.bst`, do not delete that file.

Use the Rmarkdown equivalent of the \LaTeX citation system using `[@<name>]`.
Example: (Taylor and Green 1937), (Knupp 1999; Kamm 2000).

To include all citation from the `.bib` file, add `\nocite{*}` before the end of the document.

Further information

All \LaTeX environments supported by the main template are supported here as well; see the `.tex` sample file [here](#) for more details and example.

References

- Kamm J (2000) Evaluation of the Sedov-von Neumann-Taylor blast wave solution. Technical Report Technical Report LA-UR-00-6055, Los Alamos National Laboratory.
- Knupp P (1999) Winslow smoothing on two-dimensional unstructured meshes. *Eng Comput* 15: 263–268.
- Taylor G and Green A (1937) Mechanism of the production of small eddies from large ones. *P Roy Soc Lond A Mat* 158(895): 499–521.