Ethnie oder Schicht?

Eine experimentelle Überprüfung von Diskriminierung an deutschen Grundschulen

Sebastian E. Wenz Kerstin Hoenig

Otto-Friedrich-Universität Bamberg

Frühjahrstagung der DGS-Sektion “Modellbildung und Simulation”,
Universität Konstanz, 21. – 22. März 2013

SPONSORED BY THE

Federal Ministry
of Education
and Research

Outline

1. Motivation
2. Research Design
3. Results
   - Grades
   - Expectations
4. Conclusion

Why discrimination? Why this experiment?

- Comparatively high IEO in Germany with regard to both social class and ethnic background
- Many analyses show group differences in grades and recommendations even conditional on relevant controls (e.g. Arnold et al. 2007, Ditton 2005, Schneider 2011, Kiss 2011)
- The few papers discussing discrimination explicitly (e.g. Kristen 2006, Schneider 2011, Kiss 2011) use regression models on survey data ("residual approach" $\Rightarrow$ omitted variable bias)
- The only experimental study (Sprietsma, 2009) confounds ethnic and social class discrimination

Aims

We wanted to...

- disentangle ethnic from social discrimination.
  - ⇒ Treatment
- shed light on the mechanisms that potentially lead to discrimination
  - ⇒ Dependent variables
- provide sociologically relevant (i.e. externally valid) experimental (i.e. internally valid) evidence on discrimination by teachers in German elementary schools.
  - ⇒ Sampling procedure, analyzed subsample.
- be able to speculate about individual and group discrimination.
  - ⇒ Two points along the performance/ability distribution.

Defining Discrimination

Differential Treatment Discrimination

Ethnic (Social class) discrimination is the treatment of a person because and only because of their ethnic (social class) background (cf. Aigner/Cain, 1977; Becker, 1971; Blank et al., 2004; Fiske, 1998; Heckman, 1998; Holzer/Ludwig, 2003; Mickelson, 2003).

- Question: What triggers differential treatment?

Individual Discrimination vs Group Discrimination

- Ethnic (Social) discrimination on the individual level occurs when a member of one ethnic (social) group is treated less favorably than an otherwise equal member of another ethnic (social) group and suffers adverse or negative consequences.
- Ethnic (Social) discrimination on the group level is present, when one otherwise equal ethnic (social) group is affected negatively by a particular treatment on average.

- Question: Will individual discrimination aggregate to group discrimination?

See, e.g., Aigner/Cain (1977), Becker (1971), Heckman (1998) for discussions on this distinction and necessary conditions for group discrimination.

Disentangling Ethnic and Social Discrimination

Discrimination against migrants and ethnic minorities can stem from two sources:

1. Bias against the ethnic group they belong to
   → Children with a Turkish origin are treated differently *because they are Turkish* (differential treatment discrimination)
2. Bias against the social class they (are perceived to) belong to
   → Children with a Turkish origin are treated differently *because they belong to a lower social class* (differential effect discrimination)

Problem

- Common experimental setups compare ethnic minorities to the majority.
- On average, the ethnic majority has a higher class background than the minority.

⇒ Confounding of social and ethnic discrimination.

Background

The German Education System

At the end of elementary school **track recommendations** as given by the teachers are a major determinant of the transition to the tracked secondary school system.

While the most important determinants of these recommendations are **grades**, teachers are supposed to consider a child's **overall suitability** for the different tracks.

Theoretical Perspectives: Predictions

Discriminatory treatment in both grading and recommendations

Models based on prejudice and/or ingroup-outgroup distinctions if teachers are prejudiced and/or belong to other groups than the students in question.

Examples:

- Taste Discrimination (Becker 1971): not applicable/no discrimination
- Social Identity Theory (Tajfel 1982, Tajfel/Turner 1986)

Same prediction: Models based on stereotype consistent perception and information seeking (Snyder/Swann 1978, Darley/Gross 1983).

Theoretical Perspectives: Predictions (cont'd)

Discriminatory treatment only in recommendations

Models based on imperfect information and stereotype application if teachers' stereotypes differ between groups.

Examples:

- Statistical Discrimination (e.g. Aigner/Cain 1977)
- Dual Process Models (e.g. Fiske et al. 1999)

Research Design

- Online experiment (pretest and main study)
- Random sample of primary schools from Baden-Wuerttemberg
- Subjects: 237 primary school teachers who currently teach German
- Task: evaluating an essay written by a fourth-grader
- Cover story: association between teaching experience and diagnostic competence
- 2x2x3 Factorial Design:
  - Essay quality (average vs. below average)
  - Gender (male vs. female name)
  - Social and ethnic background (German upper middle class vs. German lower class vs. Turkish name)

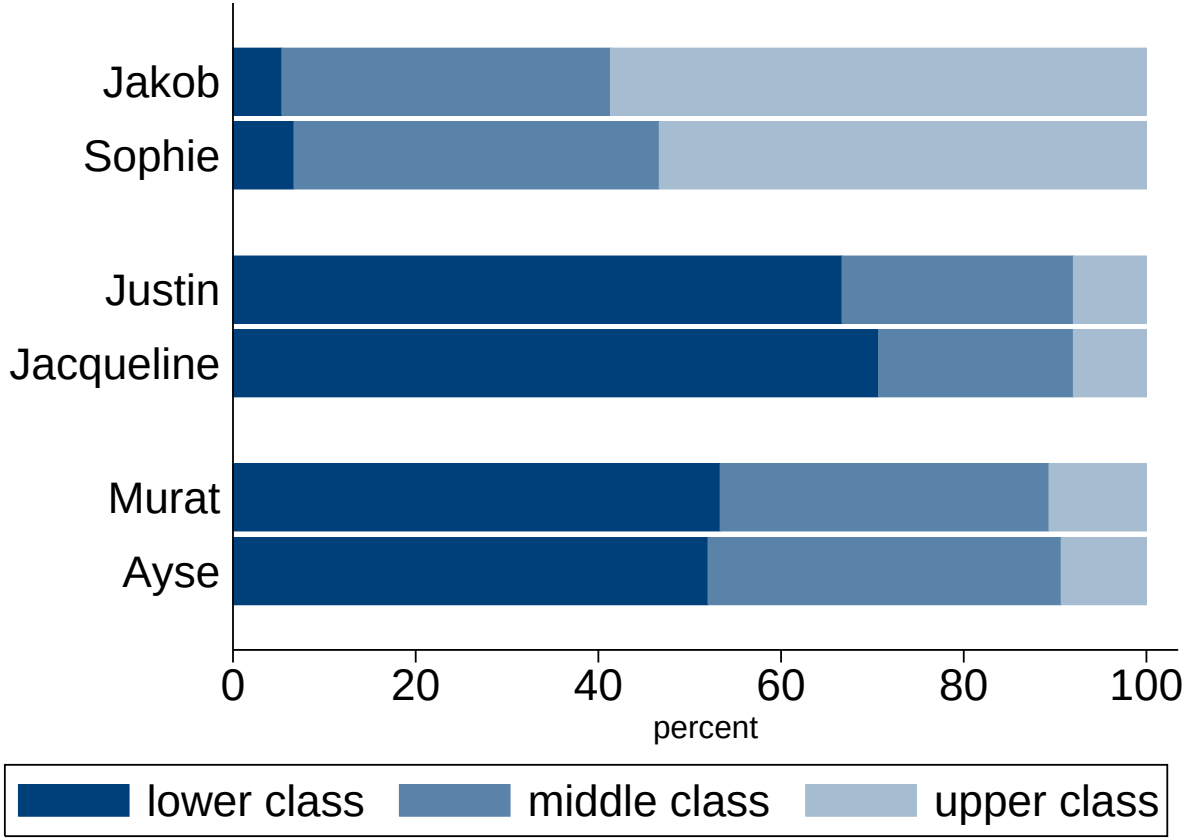
Selection of Names

We took names that are

- associated with different ethnic and social backgrounds
- reasonably popular in the relevant age group

	German upper middle class	German lower class	Turkish
Girl	Sophie	Jacqueline	Ayse
Boy	Jakob	Justin	Murat

Names: Manipulation Check



Questionnaire

Evaluation of the essay:

- "Which mark would you give [name of child] for this essay?"
- "How likely is it that [name of child] can keep up in German lessons at the *Gymnasium* with this performance?"
- ...

Further questions:

- educational background
- migration background
- age
- years of teaching experience
- ethnic class composition
- social class composition
- ...

Which results are we really interested in?

Insights from Gary S. Becker and James J. Heckman (from Heckman 1998)

"Finding a discriminatory effect of race or gender at a randomly selected firm does not provide an accurate measure of the discrimination that takes place in the market as a whole."

"The impact of market discrimination [...] is determined by the level of discrimination at the firms where ethnic minorities or women actually end up buying, working and borrowing."

Discrimination in Essay Grading

We tried **everything** and found **nothing**. [See slide "Grades" in the appendix for results of OLS regressions.]

Expectations

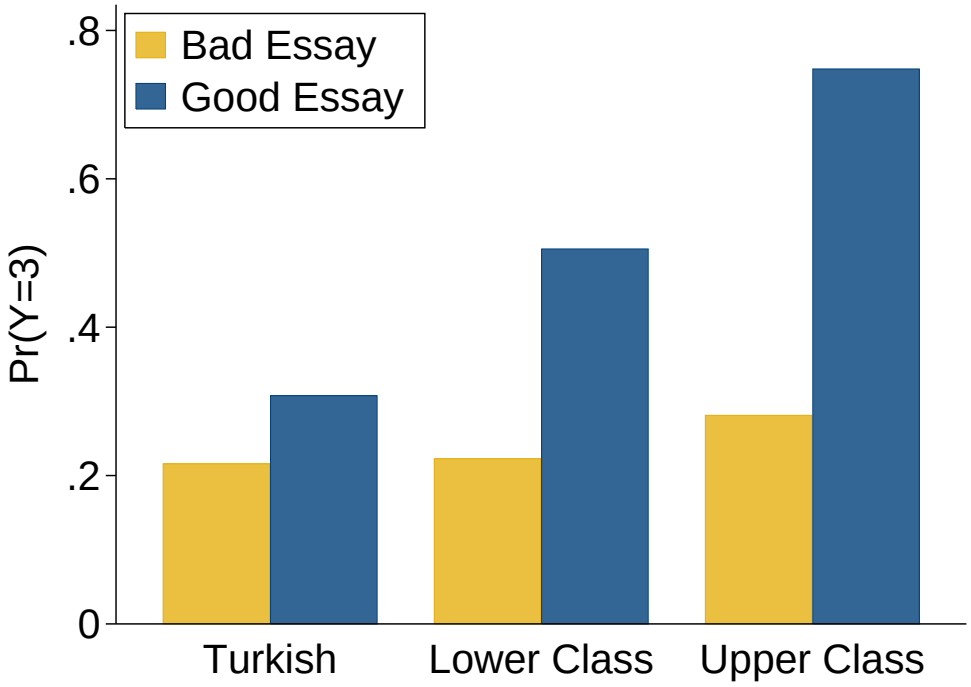
Question: "How likely is it that [name of child] can keep up in German lessons at the Gymnasium with this performance?"
5-point scale, recoded into 3 categories (1=1, 2=2, 3/4/5=3).

Ordinal logistic regression of expectations

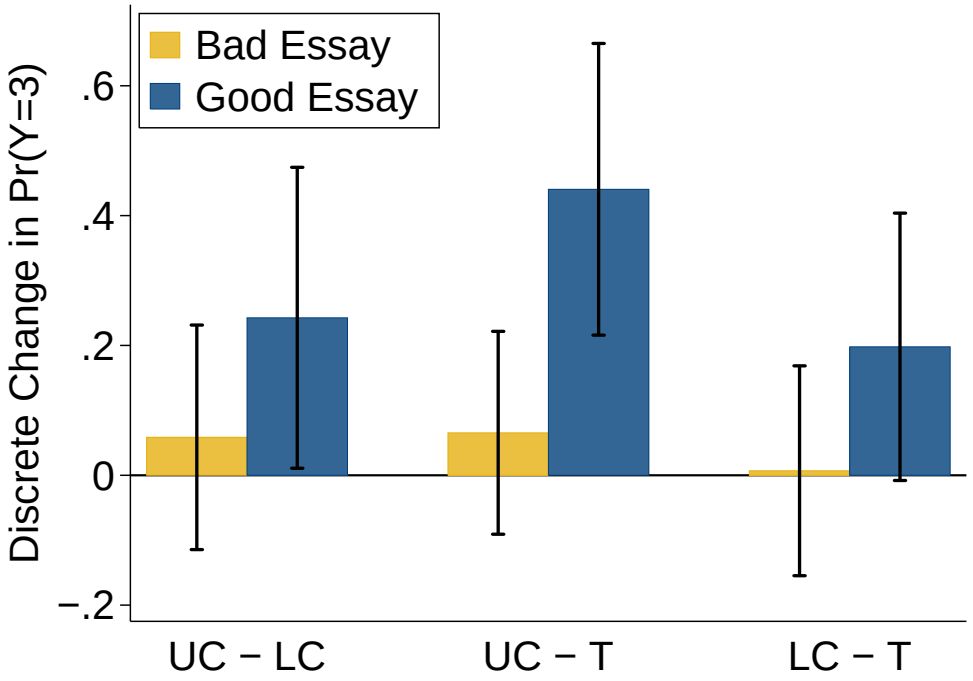
Essay quality: bad	-1.17^{**}	(0.28)	-2.03^{**}	(0.56)
Gender: female	0.03	(0.28)	-0.02	(0.28)
Name: Turkish	-0.94^{**}	(0.34)	-1.90^{**}	(0.58)
Name: German lower class	-0.52	(0.35)	$-1.07^{\dagger}$	(0.57)
Turkish $\times$ bad quality			1.55^{*}	(0.72)
Lower $\times$ bad quality			0.76	(0.74)
τ_1	-2.04	(0.47)	-2.67	(0.60)
τ_2	-0.63	(0.45)	-1.24	(0.58)
Observations	199		199	
Log Likelihood	-203.46		-201.02	

† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$
Controlled for teacher characteristics

Predicted Probabilities



Discrete Change Effects



Grades

- No evidence for discrimination based on the child's name
- Results support models based on imperfect information and stereotype application (e.g. Dual Process Models, Statistical Discrimination) but reject models based on prejudice and those based on stereotype consistent perception and information seeking.

Expectations

- Individual discrimination against children with a lower-class and Turkish name, if essay quality is good
- Result of group specific returns to performance especially support Statistical Discrimination.
- What about Aversive Racism? $\Rightarrow$ Results for an excellent essay?

Individual or Group Discrimination?

Conditions for group discrimination:

- Normally distributed variable: Different reliabilities of observed performance for different groups (=Differential returns to performance) and risk averse teachers
- Categorical variable: Different reliabilities of observed performance for different groups (=Differential returns to performance) sufficient
- Always: If teachers' stereotypes with regard to relevant dimensions overestimate (underestimate) the gap between Turkish and German students, group discrimination against the Turkish (German) students occurs.

Thank you!

Questions and comments can be sent to
sebastian.wenz@uni-bamberg.de

SPONSORED BY THE

Federal Ministry
of Education
and Research

Experimental Evidence

There is international evidence that teachers discriminate against disadvantaged groups. Some examples:

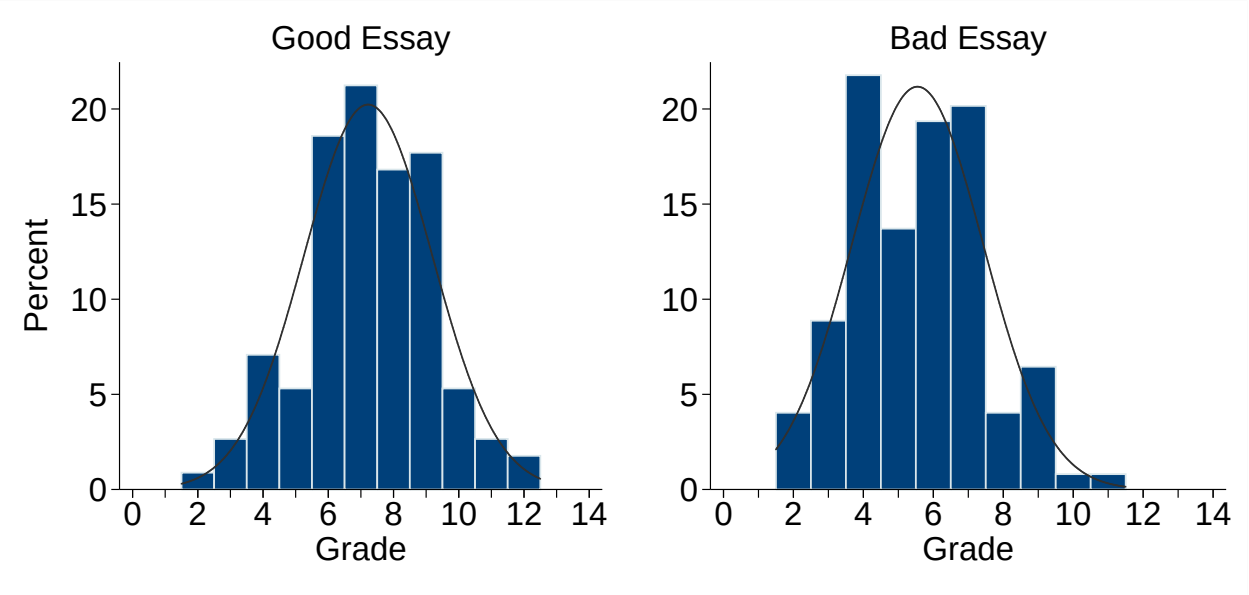
Names Harari & McDavid 1973 [USA]: Essay quality is rated higher for names connected to positive stereotypes

Race DeMeis & Turner 1978 [USA]: Black students' performance and potential is consistently evaluated lower than that of Caucasian students

Gender Lavy 2008 [Israel]: In a natural experiment, boys are disadvantaged in comparison to girls if their gender is known

Caste Hanna & Linden 2009 [India]: Children from lower castes get lower scores in a competition for a financial prize

Essay Quality



Grades

full sample

Regression of essay grades on essay quality, child's gender and child's background

Essay quality: bad	-1.70^{**}	(0.25)
Gender: female	0.37	(0.25)
Name: Turkish	0.02	(0.30)
Name: German lower class	-0.02	(0.32)
Constant	7.04^{**}	(0.28)
Observations	237	
R^2	0.17	

† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Expectations

full sample

Ordinal logistic regression of expectations		
Essay quality: bad	-1.37^{**}	(0.27)
Gender: female	0.02	(0.26)
Name: Turkish	-0.97^{**}	(0.32)
Name: German lower class	$-0.64^{\dagger}$	(0.33)
τ_1	-2.08	(0.45)
τ_2	-0.62	(0.43)
Observations	223	
Log Likelihood	-224.43	

† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Controlled for teachers' education and migration background, gender, and teaching experience

Expectations

full sample

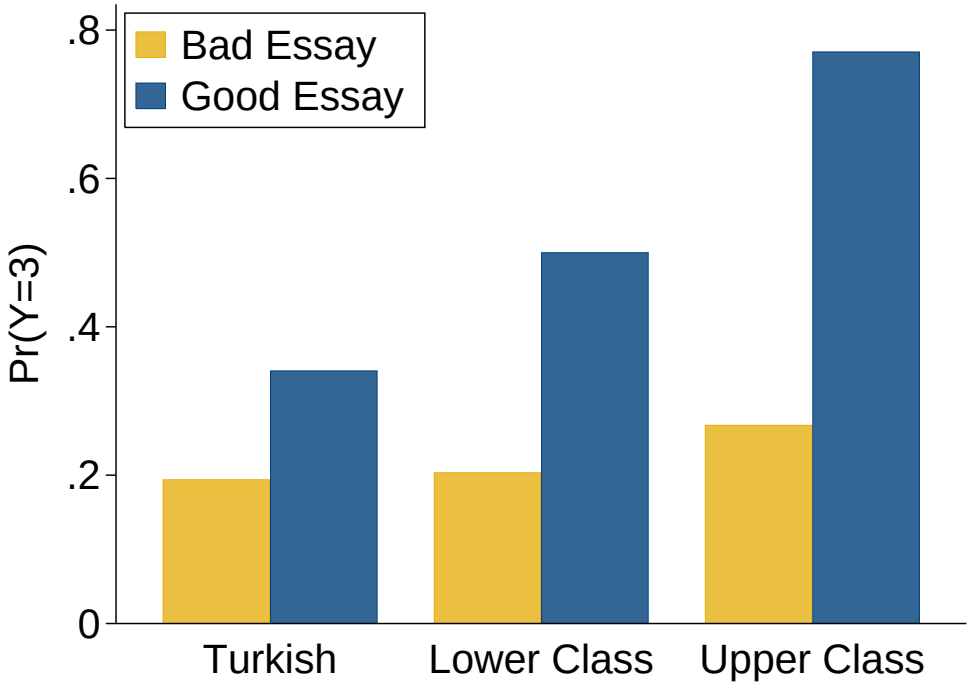
Ordinal logistic regression of expectations		
Essay quality: bad	-2.22^{**}	(0.52)
Gender: female	-0.01	(0.27)
Name: Turkish	-1.87^{**}	(0.54)
Name: German lower class	-1.21^{*}	(0.52)
Turkish $\times$ bad quality	1.46^{*}	(0.67)
Lower $\times$ bad quality	0.86	(0.69)
τ_1	-2.64	(0.55)
τ_2	-1.16	(0.53)
Observations	223	
Log Likelihood	-221.97	

† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Controlled for teachers' education and migration background, gender, and teaching experience

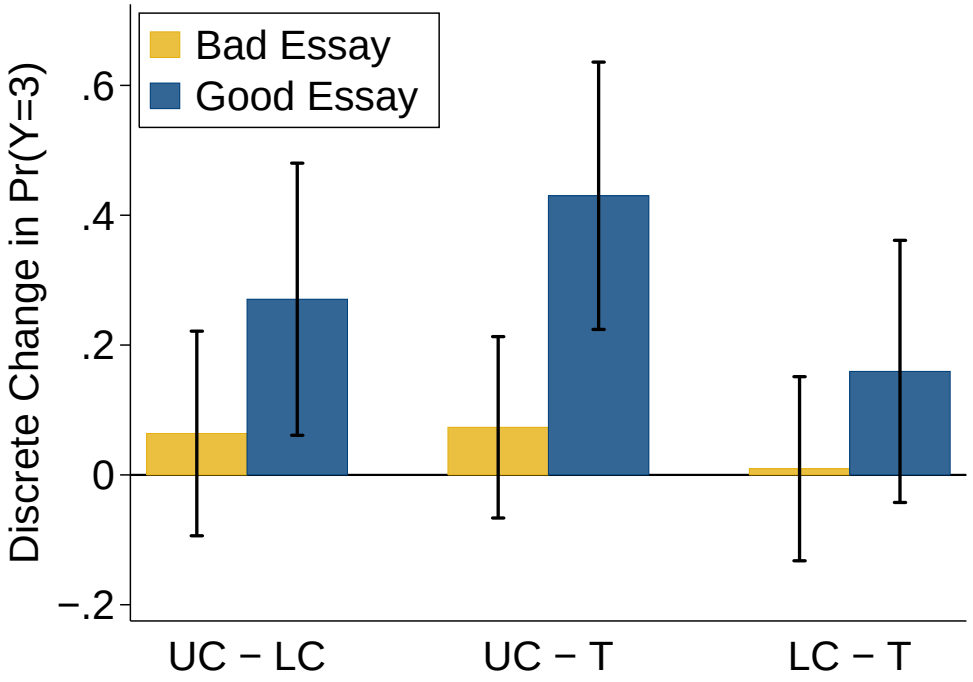
Expectations

Predicted Probabilities – full sample



Expectations

Discrete Change Effect – full sample



The Effect of Teaching Experience

Ordinal logistic regression of expectations		
Essay quality: bad	-2.08^{**}	(0.61)
Gender: female	-0.04	(0.29)
Name: Turkish	-3.25^{**}	(0.83)
Name: German lower class	-3.02^{**}	(0.86)
Teaching Experience	-0.09^{**}	(0.03)
Turkish $\times$ Experience	0.11^{**}	(0.03)
Lower $\times$ Experience	0.08^{*}	(0.03)
Turkish $\times$ bad quality	1.63^{*}	(0.75)
Lower $\times$ bad quality	0.83	(0.77)
τ_1	-4.03^{**}	(0.80)
τ_2	-2.54^{**}	(0.78)
Observations	199	
Log Likelihood	-194.96	

† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Controlled for teachers' gender, education and migration background

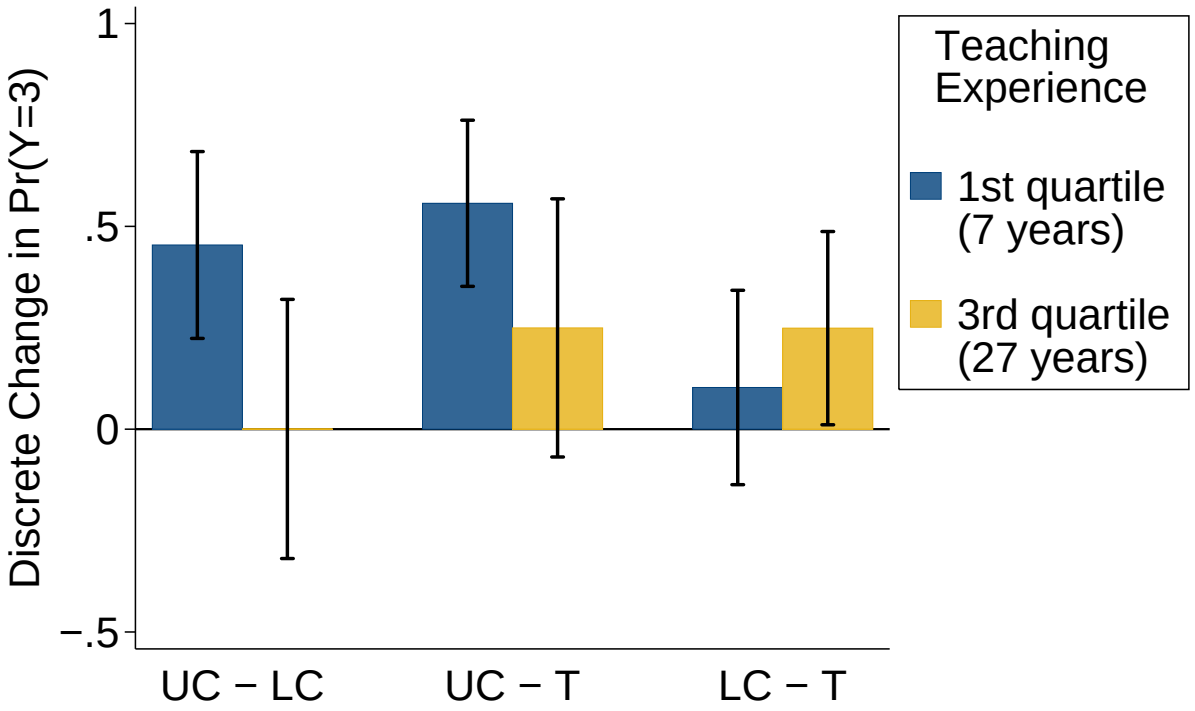
The Effect of Teaching Experience

Predicted pobabilities

Essay quality is good. All other variables held constant at the mean.

The Effect of Teaching Experience

Discrete change effect



Essay quality is good. All other variables held constant at the mean.

Screenshot

Der folgende Aufsatz wurde von Sophie geschrieben, die 10 Jahre alt ist und die vierte Klasse einer Baden-Württembergischen Grundschule besucht. Aufgabe war, eine kurze Geschichte mit Einleitung, Hauptteil und Schluss zu dem Titel "Nass bis auf die Haut" zu schreiben. Der Aufsatz wurde auf Rechtschreibfehler korrigiert.

Nass bis auf die Haut

An einem Montagmorgen um 9:30 Uhr verabredete sich Dennis mit seinen Freunden am Fluss. Der eine von ihnen hieß Nils, eine andere Jana, und noch Sakada. Das waren seine besten Freunde.

Es waren schon alle da als Jana kam. Sie hatten sich zum Angeln verabredet. Dennis brachte sogar seine ganze Ausrüstung mit. Es wären die besten Angelruten die er besaß. Nach einer Weile warf er das erste Mal aus. Nach 7 Minuten fragte Jana: Wieso beißt da nichts an? Dennis wollte gerade etwas sagen, da riss ihn ein riesiger Fisch ins Wasser. Nils, der furchtlose, sprang ins Wasser und sagte: „Wir müssen Dennis helfen, er kann doch nicht schwimmen." Sakada und Jana sprangen ihm hinterher und schrien: „Für Dennis." Doch als die beiden das Wasser betraten, kam das Monster von Loch Ness. Das Monster schnappte die beiden, riefen nach Hilfe aber vergeblich. Auf einmal klingelte das Handy von Dennis. Die Mutter an der anderen Leitung hatte Angst um Dennis und die anderen Kinder. Sie fuhr gleich nach dem Anruf an den See. Als sie da war, war alles düster und neblig. Die Mutter von Dennis suchte nach den Kindern. Plötzlich tauchte das Monster wieder auf, die Mutter von Dennis versuchte mit diesem schreckenerregendem Biest zu reden, sie murmelte: „Entschuldigung du Monster wo sind die Kinder?" Doch das Monster machte nur schreckenerregende Geräusche." Die Frau stieg einfach mal auf das Biest. Das Monster schwomm auf eine abgelegene Insel des Sees wo es die Kinder versteckt hielt. Die Kinder zitterten und waren nass bis auf die Haut.

Zum Glück war alles nur ein Traum. Dennis wollte nie mehr so einen Traum haben.

Welche Gesamtnote würden Sie Sophie für diesen Aufsatz geben?

1	1-	2+	2	2-	3+	3	3-	4+	4	4-	5+	5	5-	6
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Weiter