Biographical Diversity in Higher Education

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Structure

1. Introduction
2. General Policy Framework
3. Pathways to Higher Education in Germany
4. Prior Research
5. Empirical Analyses
6. Conclusion & Discussion

Introduction

- The term diversity in higher education
- Biographical diversity

The Term DIVERSITY in Higher Education

Non-Traditional Students, typically underrepresented & disadvantaged groups

- People of color / immigrants / non-nationals / refugees / BAME
- Physical or psychological impairments / neurodiversity
- Gender identity / sexual orientation
- Mature students, senior students
- Delayed entries
- First generation students / students from low-income households
- Students with „non-linear educational biographies
- Students without formal higher education entrance certificate (HEEC)
- Students with vocational qualifications
- Part-time students
- Students in distance education

BIOGRAPHICAL DIVERSITY

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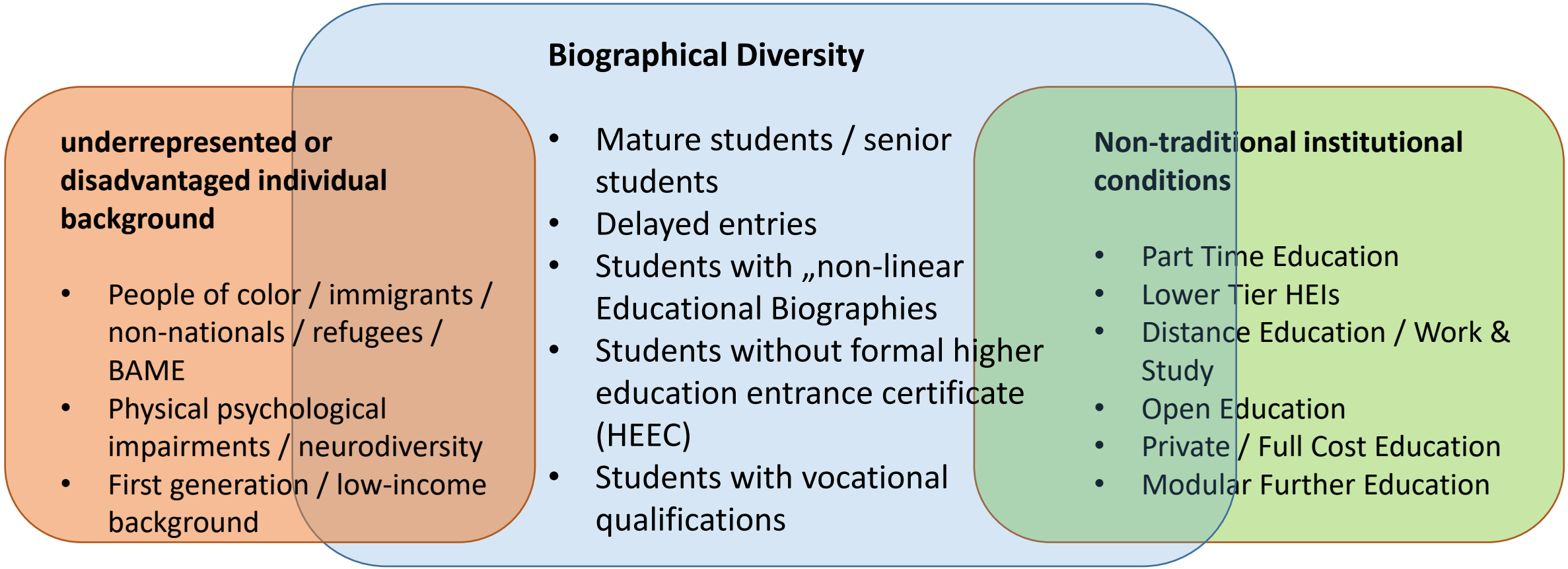
Intersections of biographical diversity with diversity of background and institutional conditions.



General Policy Framework

- Historical development
- Implementation in Germany

Policy framework: The 1970's

Expansion policy: inclusion of **underrepresented** groups

- Improved **access**: increasing **admission & foundation** of new HEIs, removal/reduction of **financial barriers** (grant & loan programs, tuition reforms)
- Institutional **diversification** (e.g. universities of applied sciences, city colleges, short programs etc.)
- First initiatives to introduce **second chance** education

Explicit goal: Reduction of **inequality**

- yet – triggered by sputnik shock (1957) also economic reasoning
- e.g. maintenance of technological and economic **competitiveness** in cold war
- need for highly **qualified workforce**
- **activation of talent reserves** among women and working classes

Policy framework: The 1990's

Rising awareness of **demographic development:**

- **New economic threat**: shrinking populations and ageing societies
- Anticipated **shortage** of labour supply
- Rapidly **changing** labour markets

Equity motives (partly) replaced by **effectiveness motives:**

- Lifelong learning necessary to maintain a **flexible availability of human capital**
- Need for earlier transition to labour market: **shorter education & longer work lives** to compensate demographic threat

Deliberate action to facilitate lifelong learning in higher education:

- **Permeability** between sectors of post-secondary education
- Establishment of **alternative routes to HEEC** & Higher Education
- Introduction of sequential structure in HE (first, second, third cycle structure in HE – Bologna Process)

Policy framework: The 2000's & 2010's

Core goals:

- **Widening participation**
- **Recognition of prior learning**
- **Equal Opportunities**

2001 Prague communiqué: **lifelong learning as EU policy objective**

> *„lifelong learning strategies are necessary to face the challenges of **competitiveness** and*
>
> *the use of new technologies, and to improve social cohesion, equal opportunities and quality of life*

2015 Yerevan communiqué: Internationalization, but also **return of equity-considerations**

> *We undertake to widen participation in higher education and support institutions that provide relevant learning activities in appropriate contexts for different types of learners, including **lifelong learning**. We will improve **permeability** and articulation **between different education sectors**. We will **enhance the social dimension of higher education**, improve **gender balance** and widen opportunities for **access and completion**, including international mobility, **for students from disadvantaged backgrounds**.*

Implementation in Germany

- Historically, „non-traditional access was always possible
- Since 1970‘s deliberate establishment of **alternative routes** to HE
- BUT: inconsistent or even random access regulations across federal states

2009: Conference of the federal ministries of education (KMK)

- Agreement to **coordinate the admission regulations** for applicants without formal entrance certificate
- Recognition of **advanced-level vocational qualifications** (technician, industrial master, certified specialists) as HEEC-equivalent
- Recognition of **vocational training + 3 years labour market experience** as HEEC-equivalent for related fields of study

Implementation in Germany

Several programs of the Federal Ministry of Education (BMBF) to develop procedures to improve

- recognition of prior learning
- access for people without a formal HEEC
- affordability of higher education for mature students

BUT

- Only very **slight increase** (number & share) of **students without formal HEEC** (Wolter et al 2014, 2017, Otto, 2021)
- Instead: expansion of **alternative routes to HEEC** (e.g. via vocational education) (Schindler 2014, Tieben & Rohrbach Schmidt 2014, 2021)
- **Concentration of non-traditional students** in particular institutions and programs, limited access to general university programs
- **Competition** between vocational and higher education
- Little support from industry and chambers of commerce for further expansion of higher education

3. Pathways to Higher Education in Germany

- Terms & Definitions
- „traditional & „non-traditional Students
- a classification

Biographical Diversity - Diversity of Terms & Definitions

Mature student

- GB: *Typically, this will mean students who are **over 21 years of age at the beginning** of their undergraduate studies, or over 25 years of age at the beginning of their postgraduate studies.* (UCAS homepage)

Delayed entry

- *The term delayed transition students refers to students who enter higher education with a **delay of more than 24 months after leaving school** for the first time* (Eurostudent homepage)

Senior Student

- In Anglo-American context: Student in 4th year
- In Germany: entered HE after active work-life, usually retired, often graduated at young age, no qualification motivation

Non-traditional student

- Unspecific umbrella term for students with non-traditional pathways or study conditions
- In Germany: student who entered without formal entrance certificate

Student with vocational qualification

- In Germany: Students who have a formal qualification for the skilled labour market, not necessarily non-traditional or mature

Student with non-linear educational biography

- Unspecific umbrella-term for students who did not take the standard/academic pathway but detours

Biographical Diversity – Diversity of Terms & Definitions

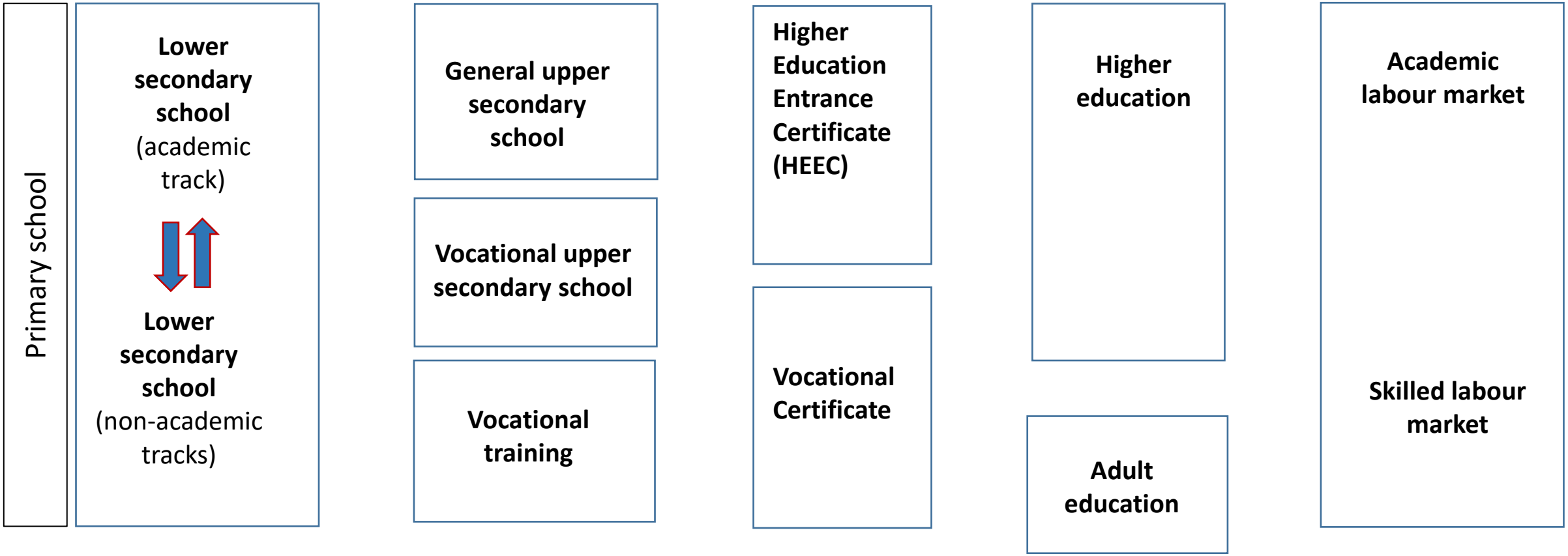
Delay in Germany

- Typically through qualification, employment or voluntary/military service
- Inactive gap years less often than elsewhere
- Non-linear pathways do not necessarily cause delays

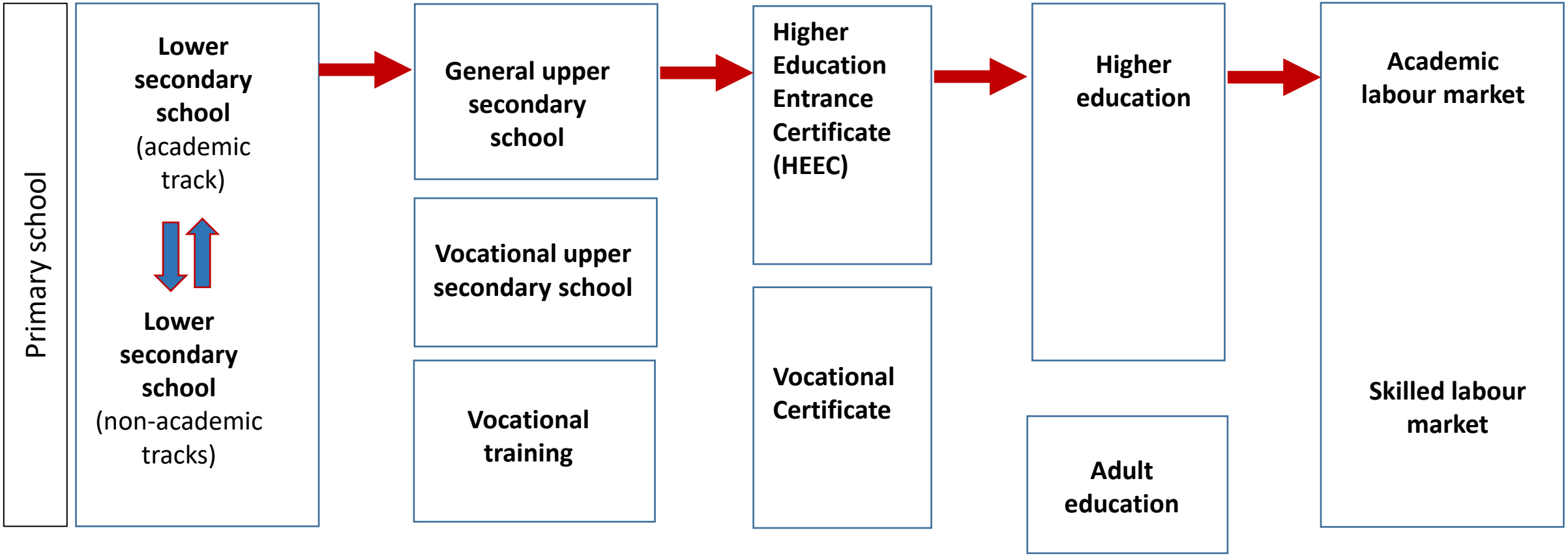
Pathway to Higher Education more relevant for Definition

1. Pathway to **entrance certificate**
2. Pathway from **entrance certificate** to **higher education**

The German Educational System: General Structure

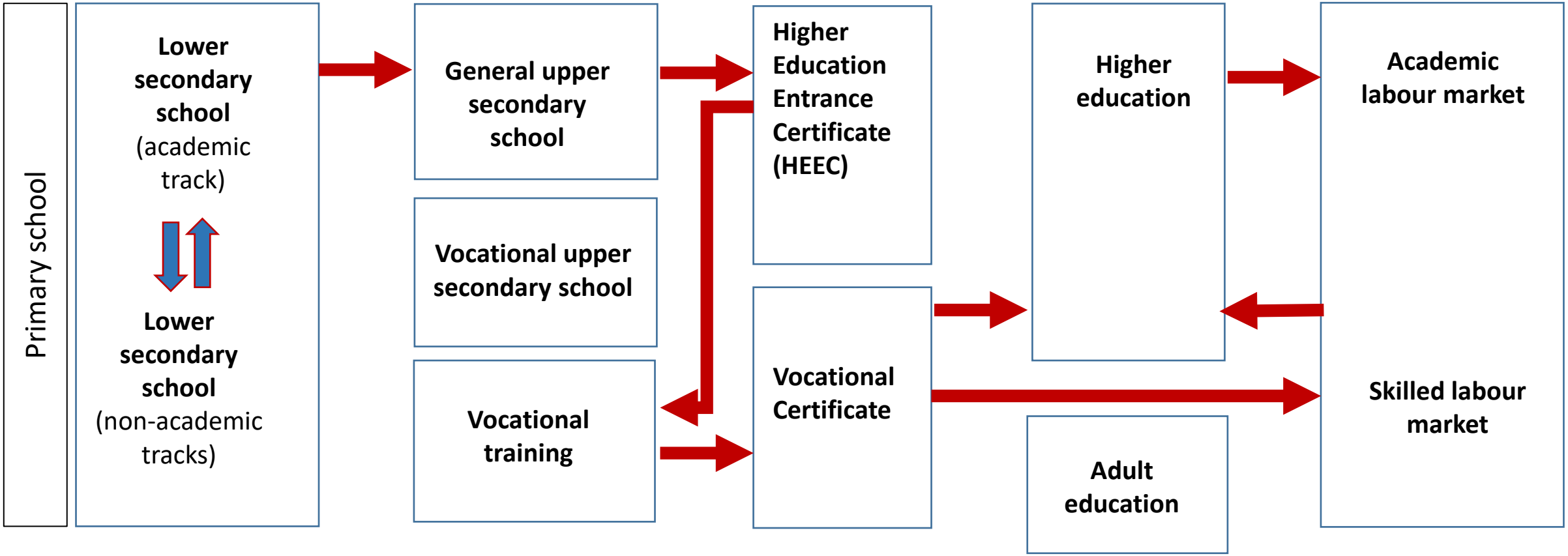


Pathways to higher education: Traditional Students (TS)



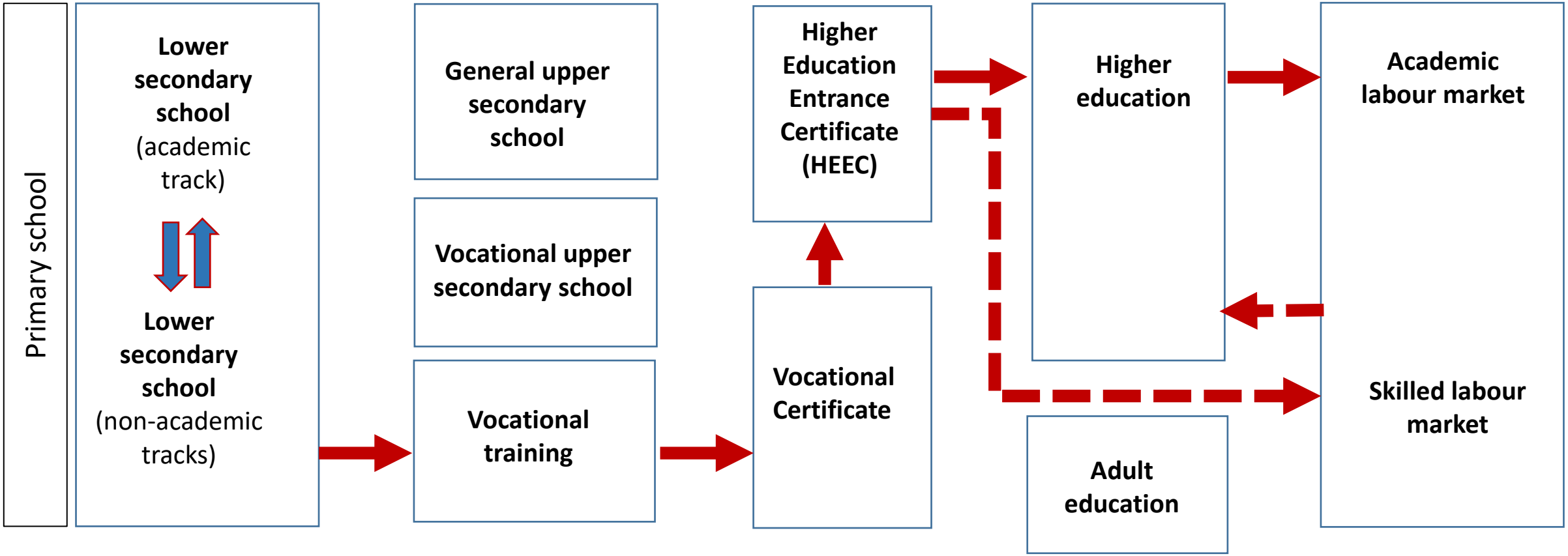
N=8699 (73%)

Pathways to higher education: Double Qualifiers (DQ)



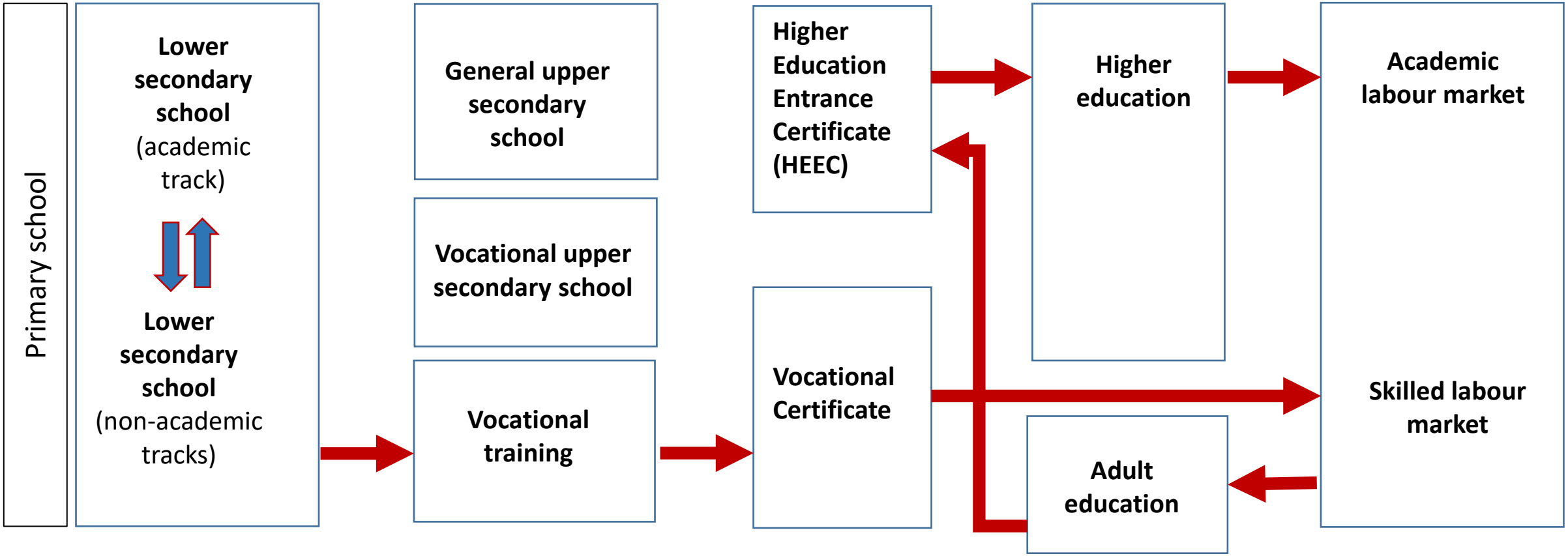
N=849 (7%)

Pathways to higher education: Restricted Entrance Certificate (RC)



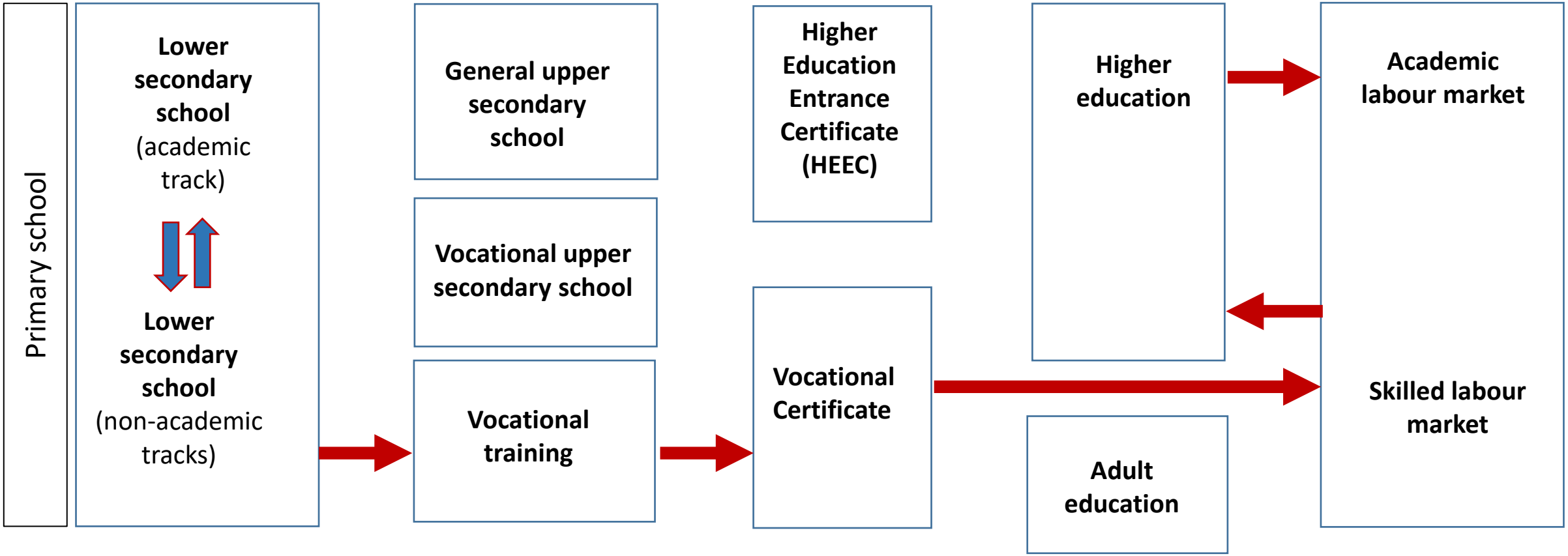
N=599 (5%)

Pathways to higher education: Second Chance (SC)



N=1348 (11%)

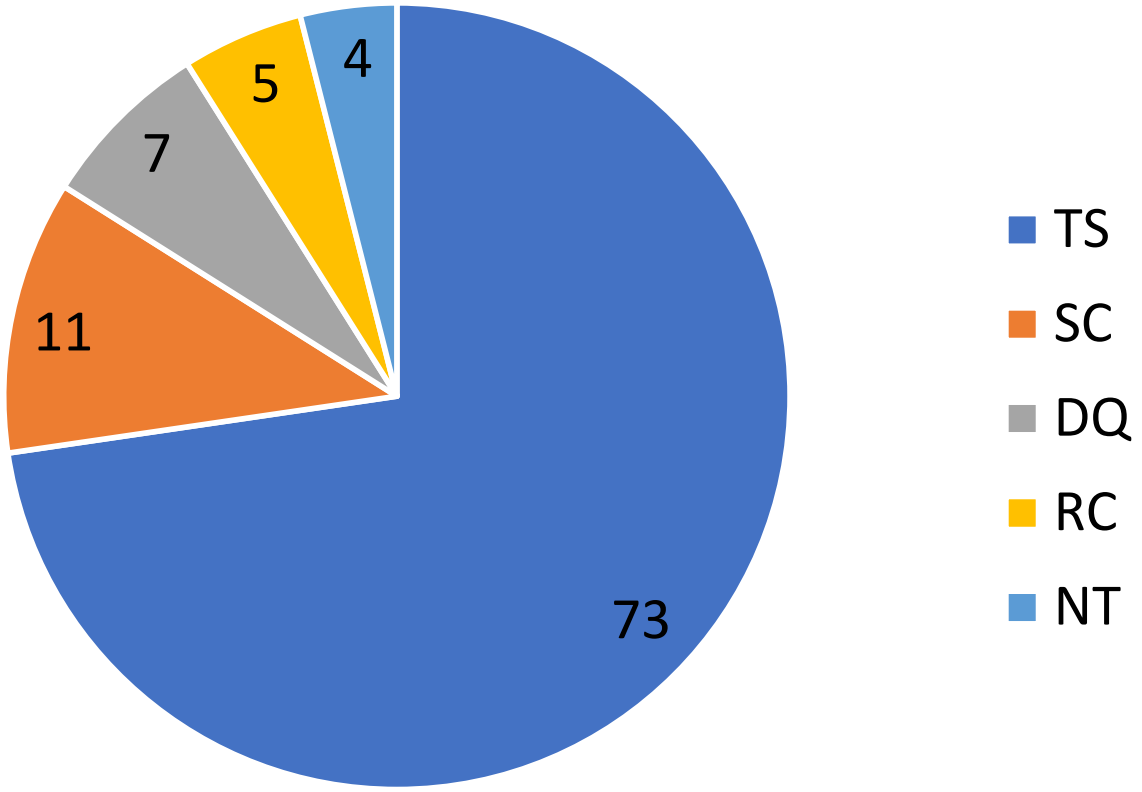
Pathways to higher education: Non-Traditional (NT)



N=474 (4%)

Distribution of Pathways

- Majority (73%) enters via direct pathway
- 23% take non-linear pathways, but have HEEC
- 4% enter without HEEC



4. Prior Research

- The core questions
- National & international empirical research
- Open questions

The core questions

Is biographical diversity associated with…

1. socio-demographic / socio-economic characteristics?
2. Study conditions
3. academic preparation / competence?
4. academic development / success?

Delays, Detours and Success in Higher Education…

Delayed transitions to higher education are associated with

- Lower levels of **academic preparation** and **low high school GPA** (Bozick and DeLuca 2005; Heather 2007; Roksa and Velez 2012, Tieben and Knauf 2019, Tieben 2021).
- Lower **socio-economic** backgrounds, higher **financial restrictions** (Tieben 2021)
- High commitment to **labour market** or **family obligations**, time restrictions (Roksa and Velez 2012, Wolter et al 2014)
- Slower progression, longer time-to-degree (Wolter et al 2017)
- Higher **motivation**, higher **goal commitment** and **better performance** in college (Cantwell et al. 2001; McKenzie and Gow 2004; Birch and Miller 2007; Heath 2007; Martin 2010; Parker et al. 2015)
- Clear **vocational orientation** (Schneider and Stevenson 1999; Arnett 2004; Crawford and Cribb 2012)
- An increased risk of **dropping out** (leaving higher education without a degree) (Hearn 1992; Bozick and DeLuca 2005; Milesi 2010, Wolter et al 2017)

The Paradox…

- NTS seem to bring in experiences, motivation and dedication that may **compensate** lower levels of **general academic preparation**
- In Germany, they often choose a **field of study similar to their prior vocation**
- Most performance comparisons between NTS and TS (i.e. grades in HE) show **equal or even better performance** in HE
- BUT: **drop out is more likely among NTS**

➢ Core conclusion of my previous research: Vocational qualification is a **paradoxical double buffer**
- on the hand **vocational skills and work experience are helpful** in higher education
- on the other hand a **vocational qualification is a safe return ticket** into the old job

… and the discussion about academic readiness

Assumptions of Conservative Perspective

- Primarily **general upper secondary education** equips students with the knowledge & skills necessary to succeed in higher education
- **Insufficient academic preparation** of students from alternative routes
- **Bad fit** between students from alternative routes and the academic culture in higher education institutions

Empirical Research

- School-leavers from vocational upper secondary education have lower performance levels in maths, languages etc. than school leavers from general upper secondary education (Köller et al 2004, 2013))

… and the discussion about academic readiness

BUT:

- Study examined school-leavers, not enrolled students
  - likely **positive selection** of higher performers into HE
- Study examined general upper secondary curriculum skills
  - proved to be powerful predictors of later performance
  - likely that **other skills are relevant** for success in HE
- Conservative assumptions ignore that non-traditional students may profit from
  - prior training and work experience
  - good match between prior vocation and field of study

➢ Current discussion about academic readiness, initiatives to define a set of **skills and individual attributes** that measure academic readiness more accurately than high school achievement (e.g. Porter & Polikoff 2012; Trautwein & Bosse 2017, Klasik & Strayhorn 2018.)

Research Questions

1. How do the 5 pathway types differ regarding basic socio-demographics
2. How do the 5 pathway types differ regarding their program choices & study conditions?
3. How do the 5 pathway types differ regarding objective and subjective measures of academic preparation?

4. Empirical Analyses

- Data
- Socio-demographics and age structures at transition to HE
- Objective & Subjective Academic Readiness
- Subjective Graduation Probability

The Data

- National Education Panel Study (NEPS)
- Cohort of approx. 12.000 Students
- First enrolment in HE in winter semester 2010/11
- Follow-ups 2x/year
- Item & methods rotation across waves

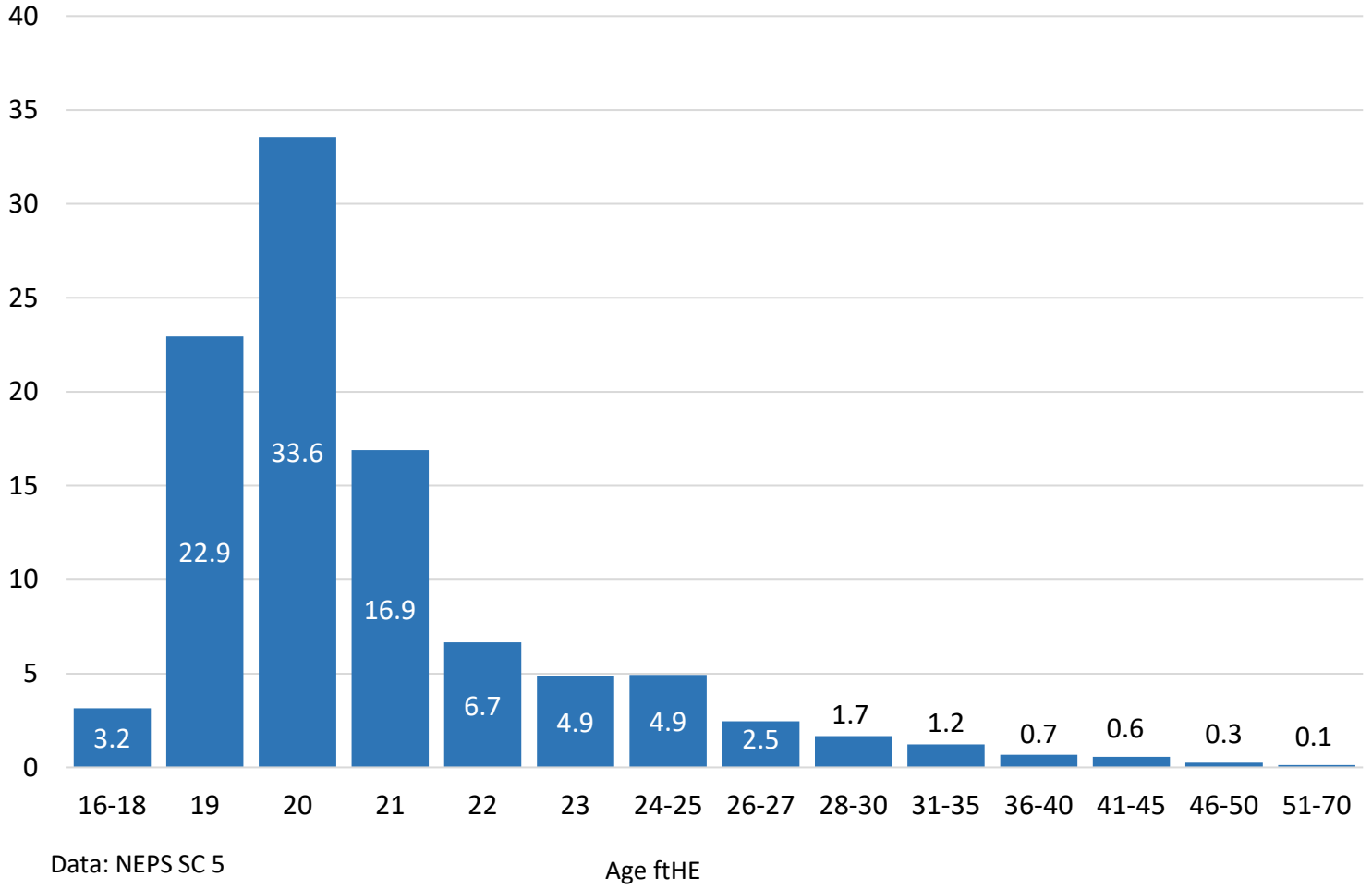
My analyses

- Information from 1st year surveys (waves 1&2)
- Reason: maximal sample, few losses due to panel attrition
- Drawback: only assessment of early phase, no reliable information about objective success measures (graduation, GPA, progress, dropout, etc.)

General student population: Age at transition

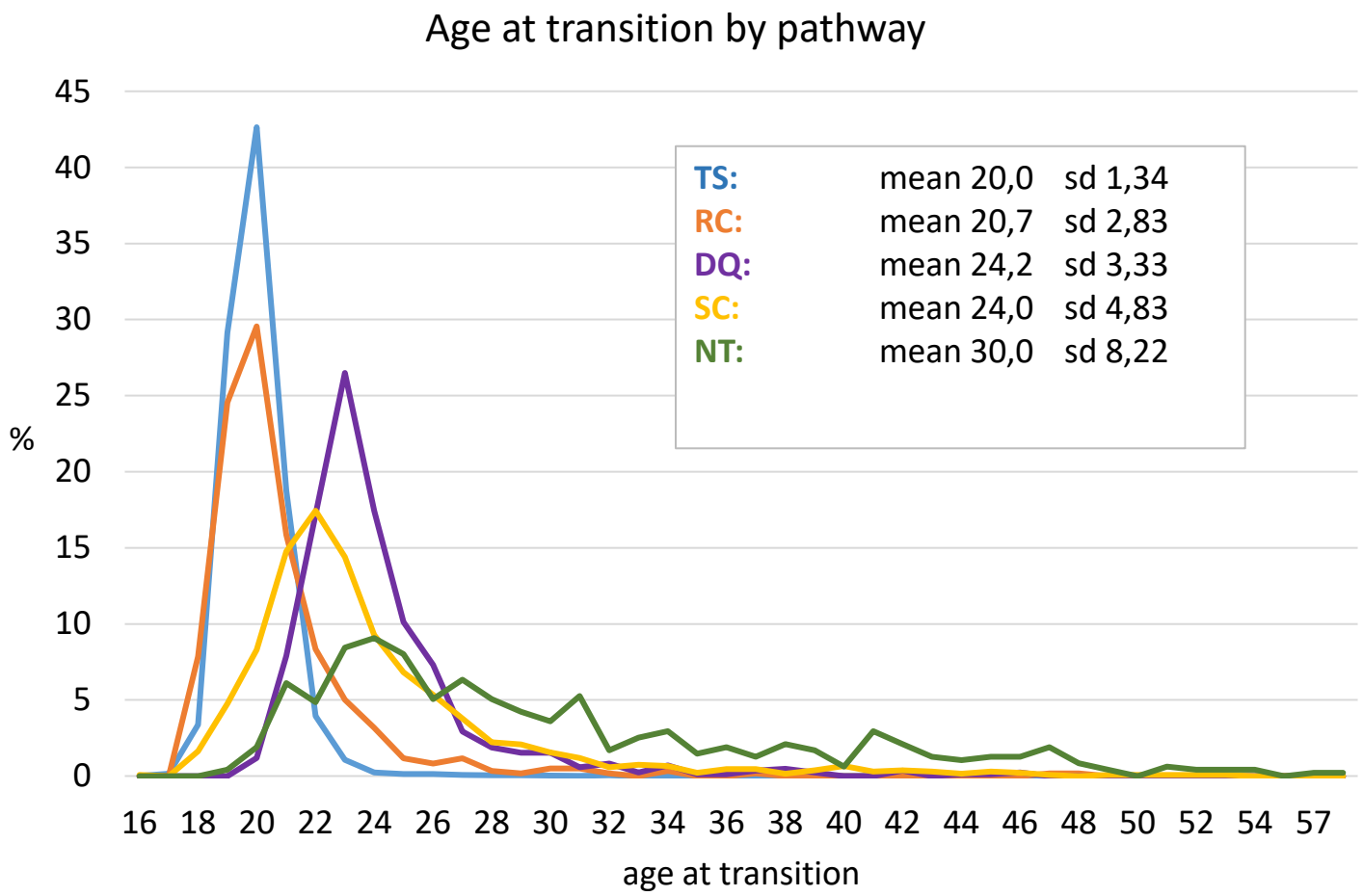
- 76% enter before age 22
- 95% enter before age 28
- Less than 2% are older than 35

➢ **Lifelong learning** does **not** seem to happen **in German HE**



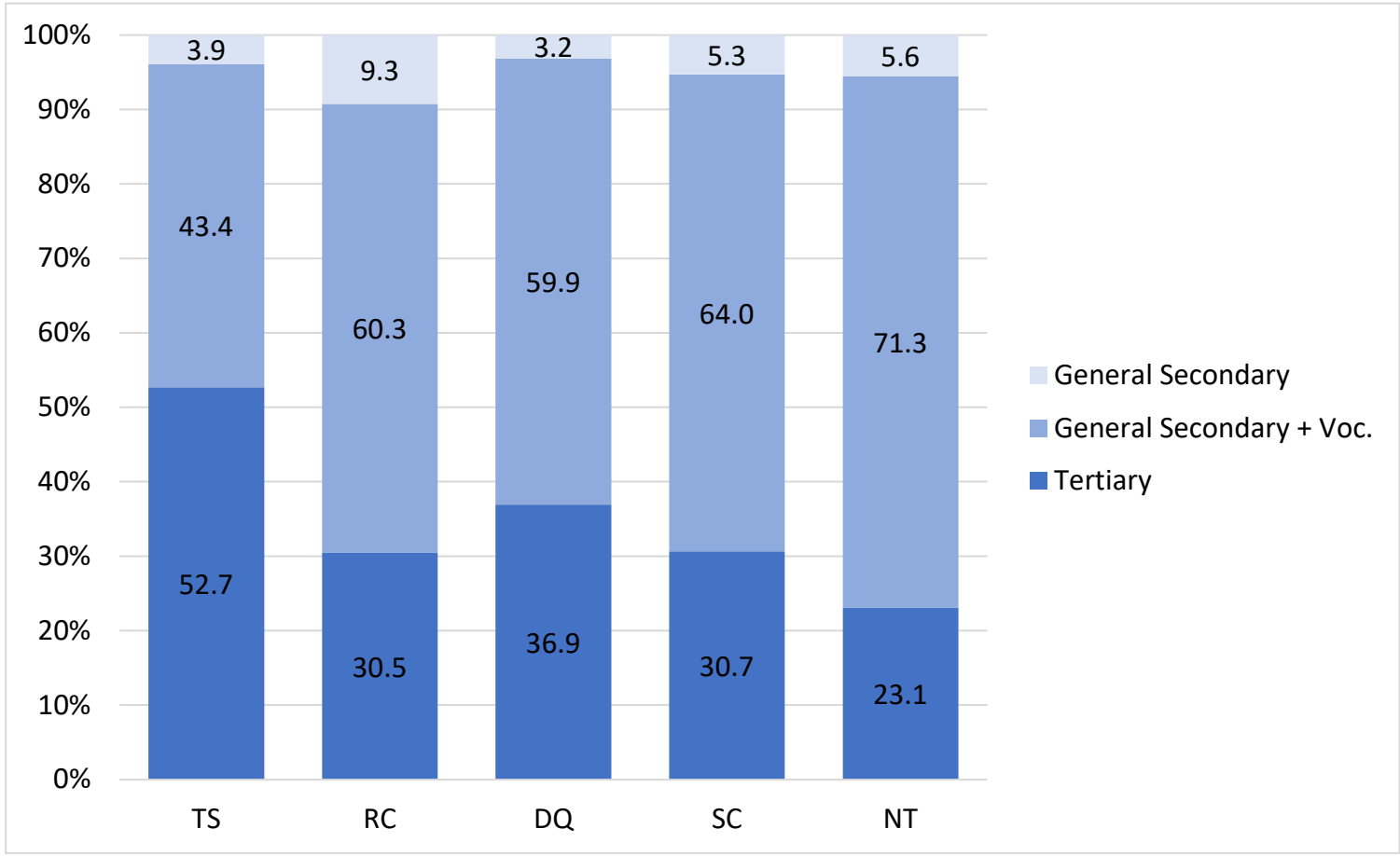
Socio-demographics: Age at transition

- TS & RC lowest mean & standard deviation
- Interesting: vocational training does not necessarily drive the transition age (RC on the go)!
- DQ & SC = **time consuming pathways**, sometimes prolonged occupational careers
- 95% enter HE before age 28
- NT: pronounced standard deviation suggests that



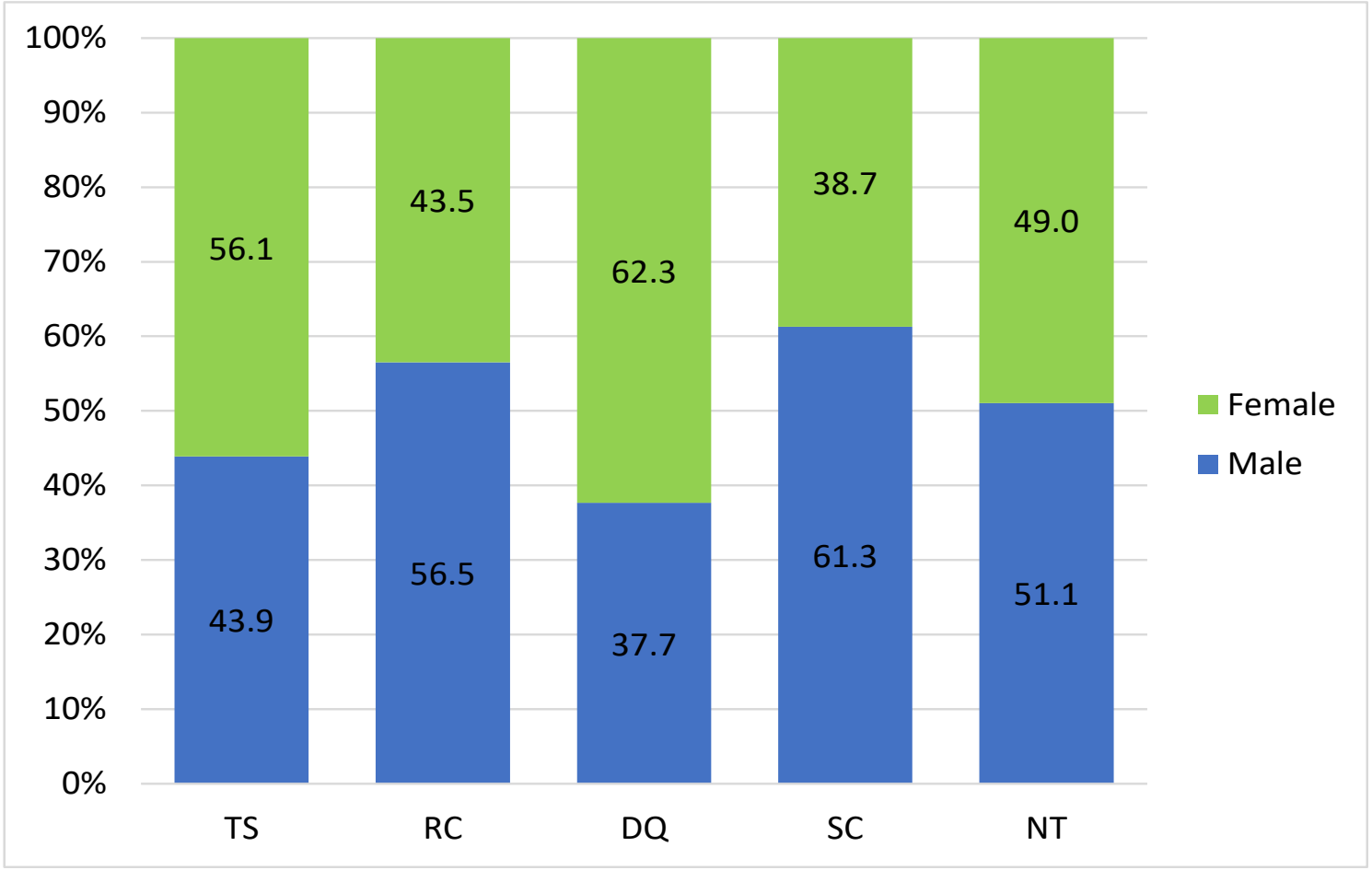
Socio-demographics: Education Parents

- Students from non-linear pathways have **lower educated parents**



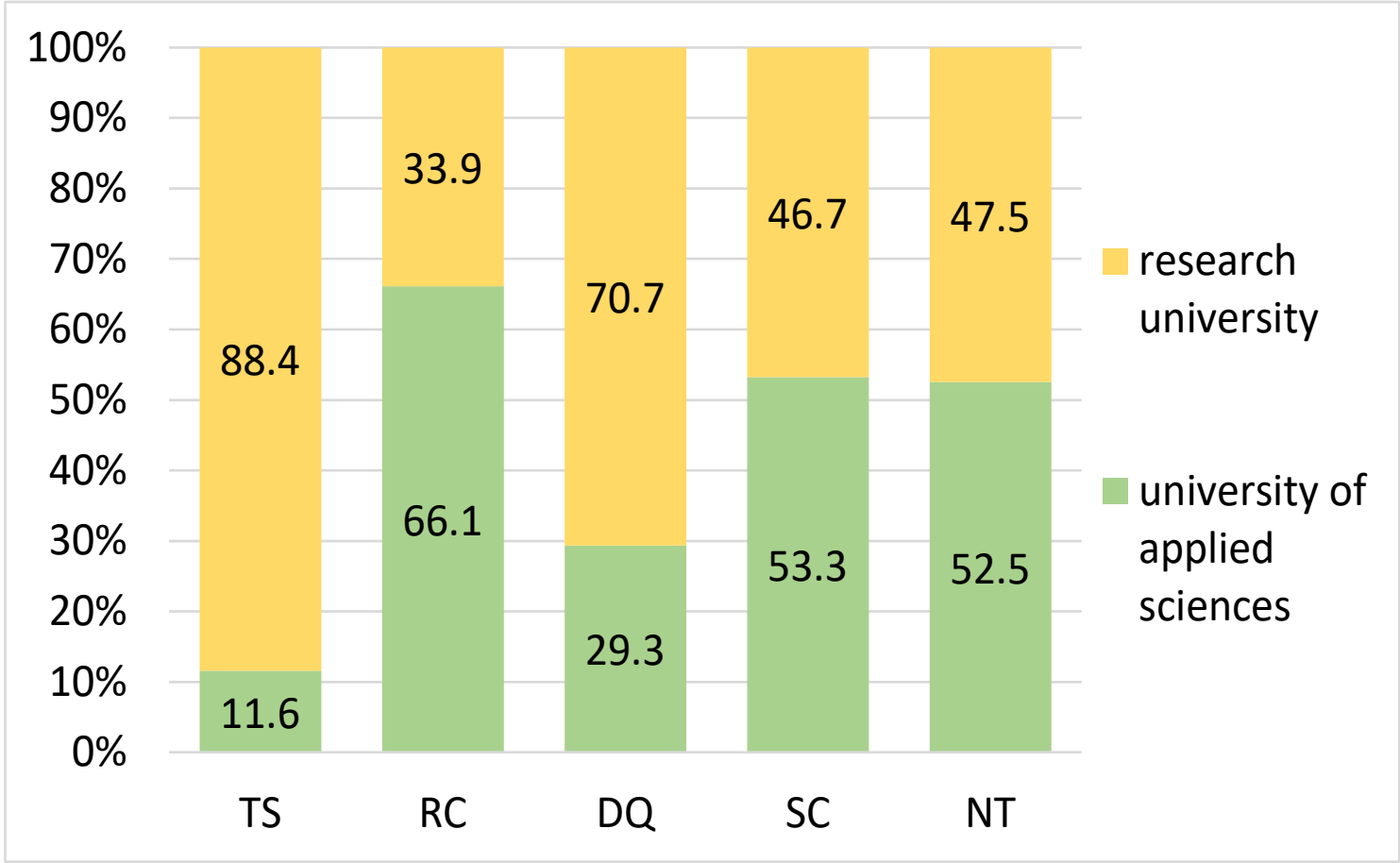
Socio-demographics: Gender

- Students from non-linear pathways have **lower educated parents**
- They are **more likely to be male** – except the double-qualifiers



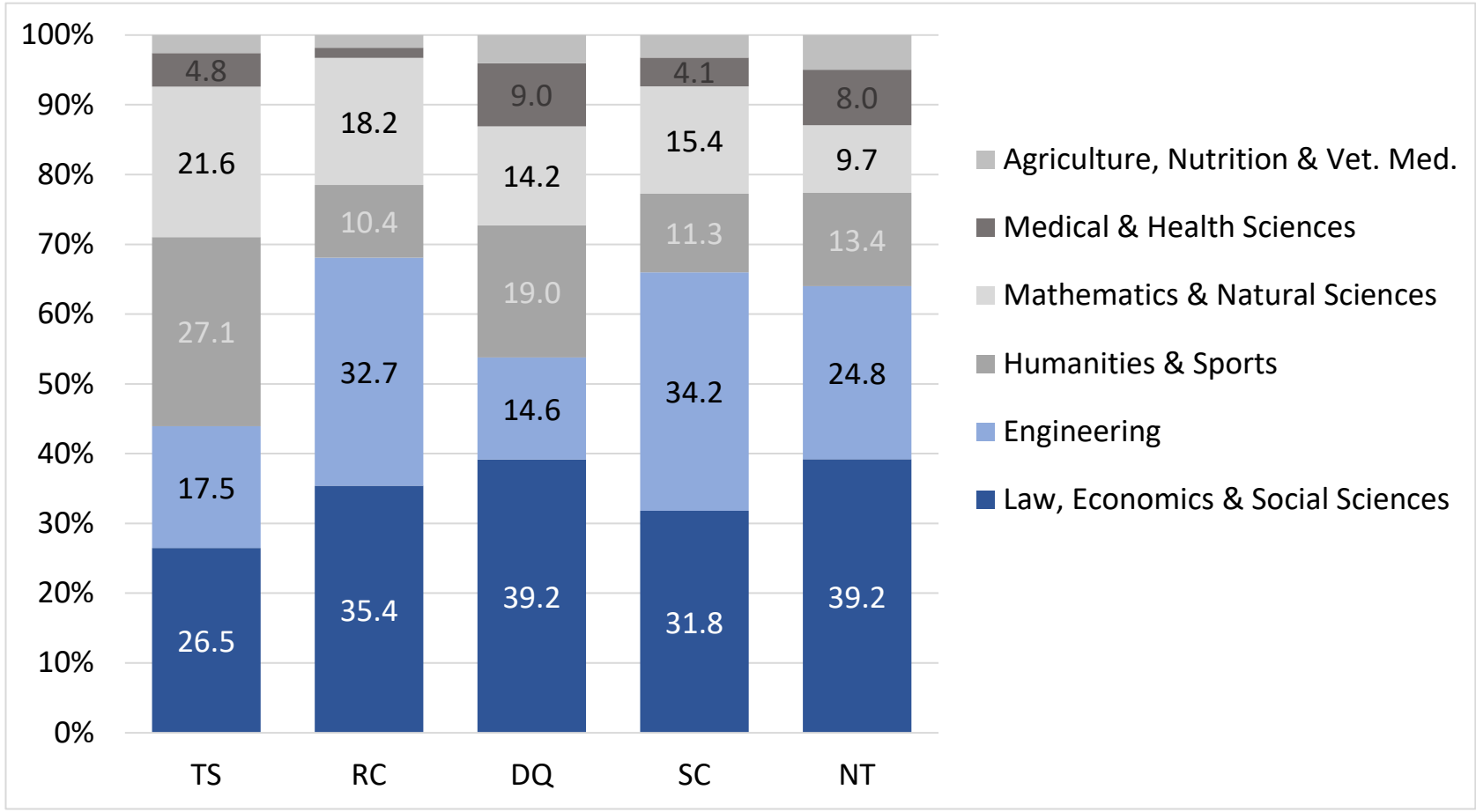
Type of Institution

- Majority of students with non-linear biographies chooses **universities of applied sciences**
- UAS were established in the 1970's to accommodate students from vocational pathways



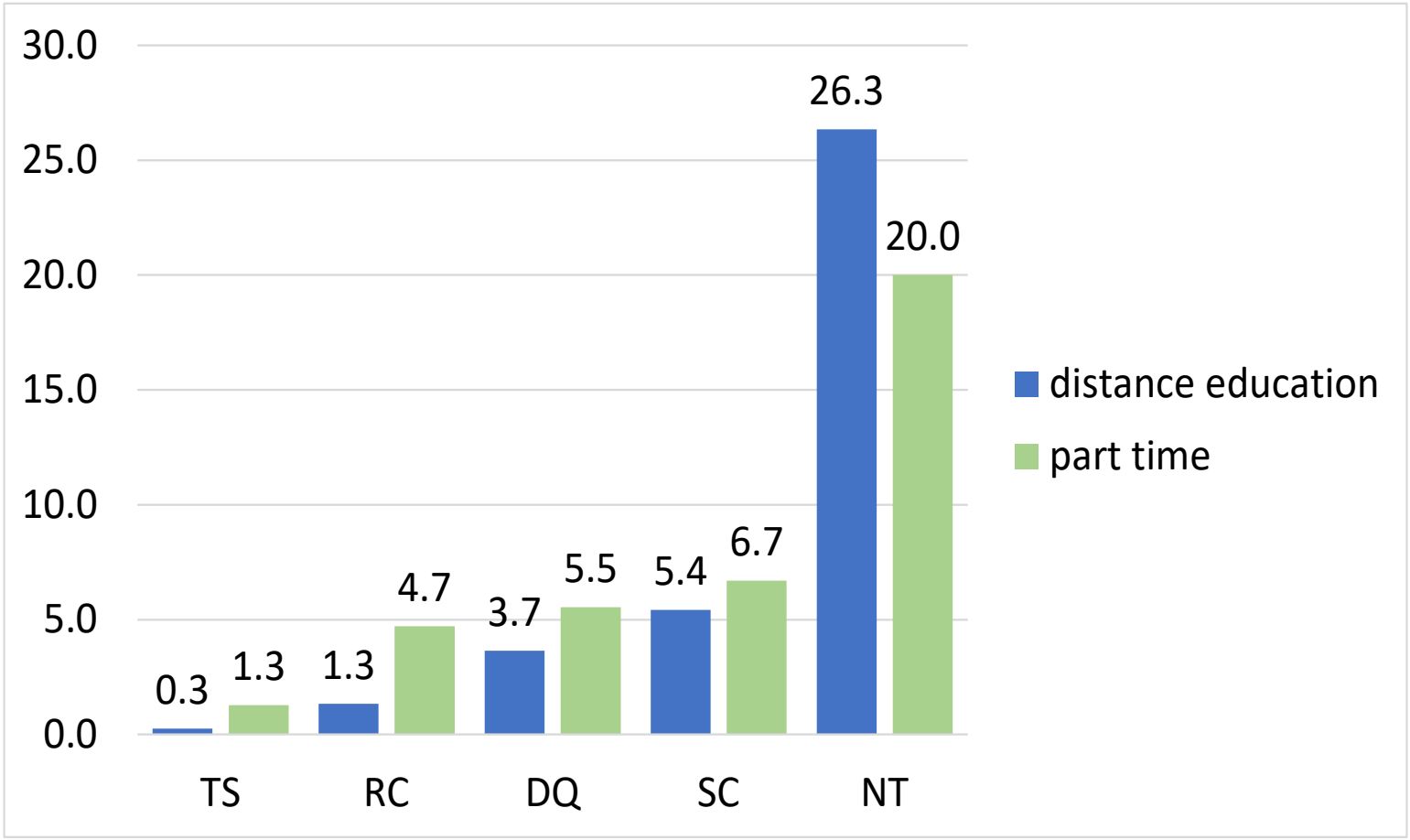
Field of study

- **Engineering** and **LESS** most popular fields of study among all non-linear pathways
- Fields with good **connectivity** with popular vocational training programmes in finance & industry



Study Conditions: Distance & Part Time Education

- Distance & Part time Education particularly popular among NTS, but not among other groups
- Possibly effect of **institutional policy**: distance institutions with **established procedures** for recognition of vocational qualifications & admission of students without formal HEEC



Academic Readiness

Objective & Subjective Measurements

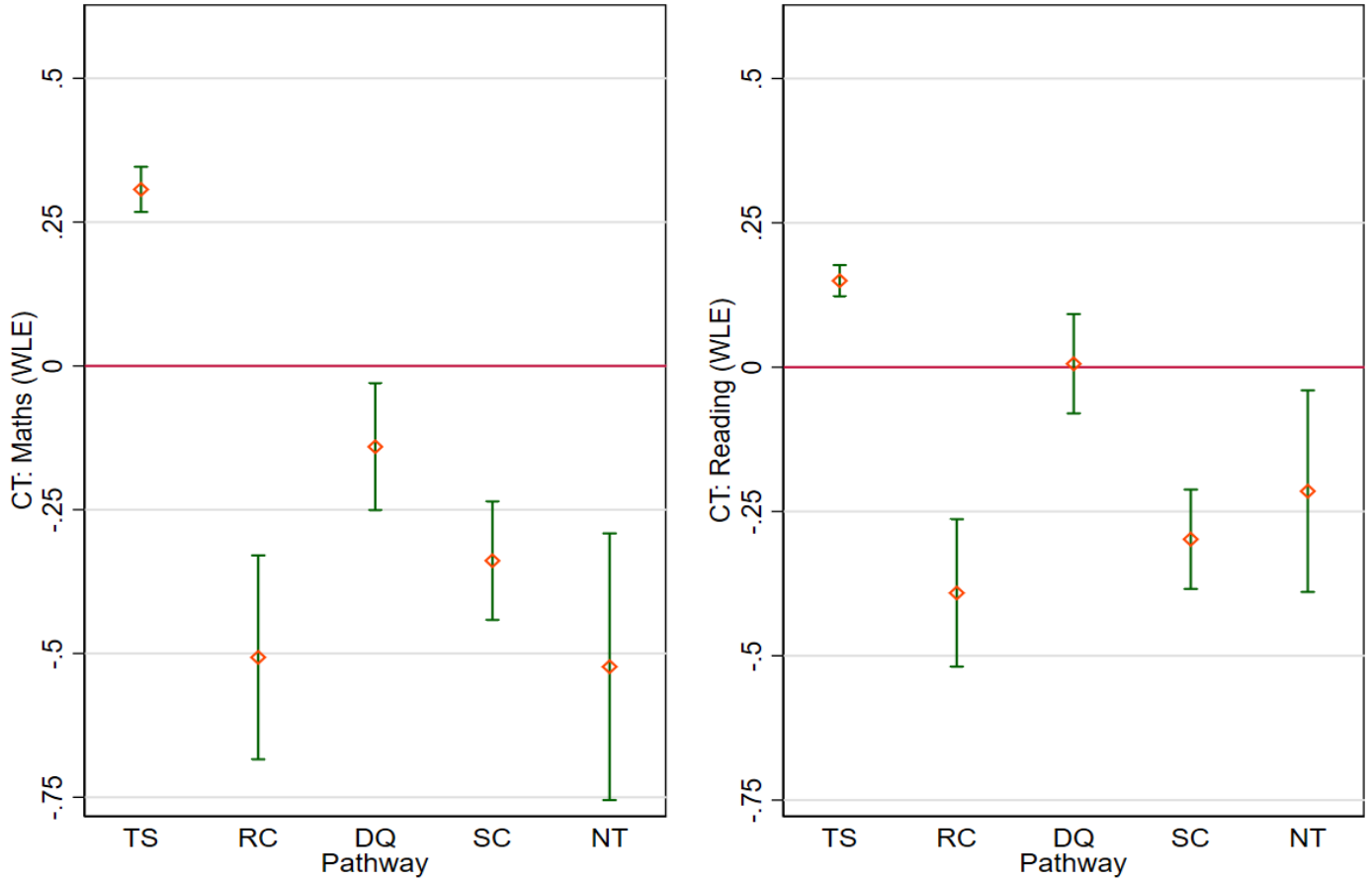
Test scores: Maths and Reading Competence

Maths

- All groups with non-linear biographies below average
- RC, SC & NT: no sig. differences, DQ

Reading

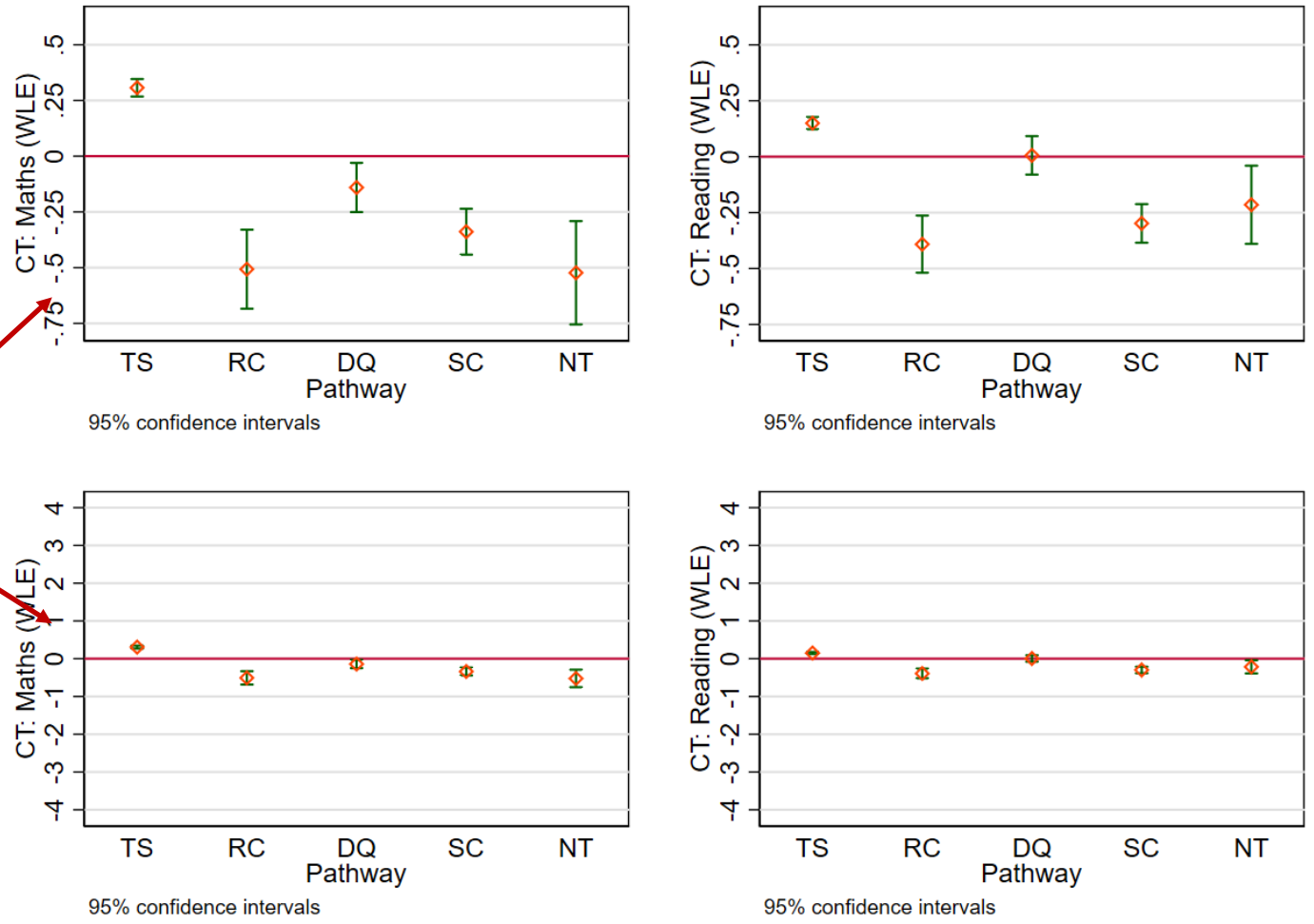
- Similar pattern, but averages of non-linear slightly higher
- Distance to TS smaller than maths



Test scores: Maths and Reading Competence

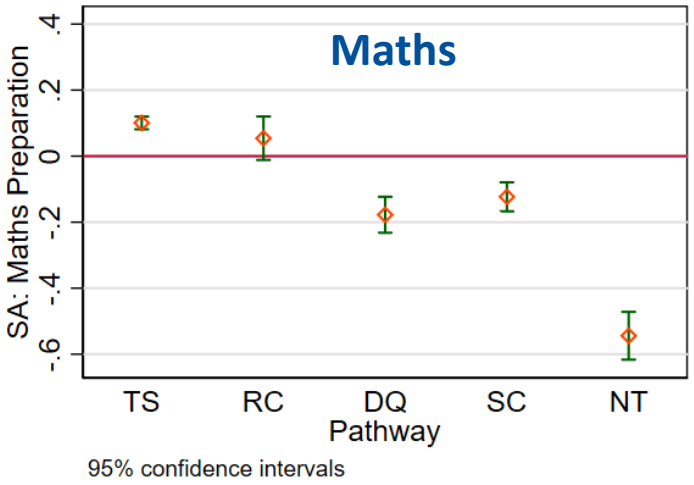
Important to note

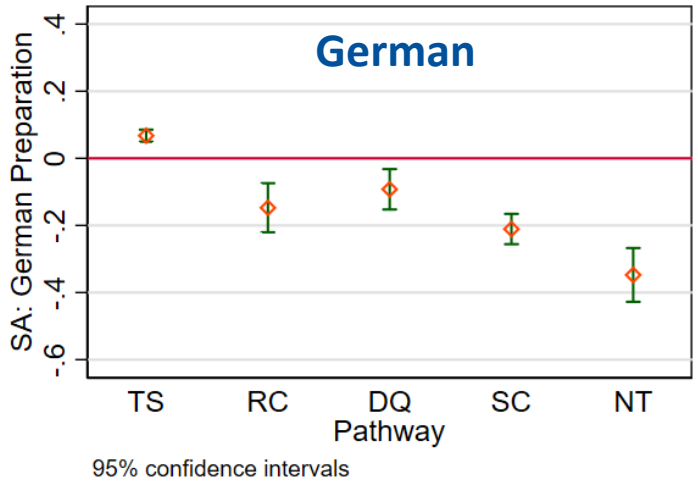
- Default formatting obscures that group differences are **significant but not large**!
- Always check on the **range of values on y-axis** before judging the group differences!

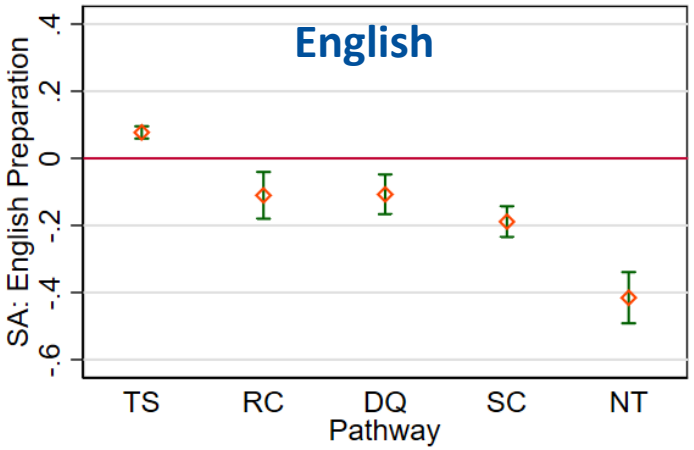


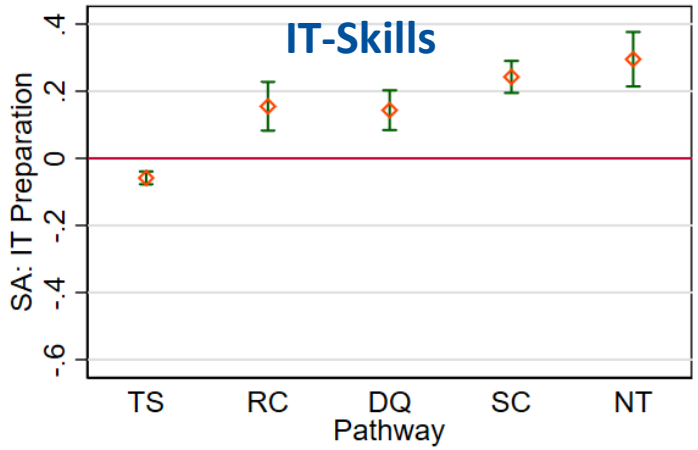
Self Assessment: Maths, German, English, IT-Competences

- **RC** seem to **overestimate** their skills
- Possibly **peer-group effects** from vocational upper secondary school…
- **NT** seem to **underestimate** their skills
- Possibly salient lack of formal certificate
- Interesting: all non-linear groups report higher levels of **IT-preparation** than NT









Self-Assessment: General Academic Preparation

Preparation in scientific methods

- All non-linear groups slightly below average
- TS significantly above, DQ significantly below average
- NT report particularly low values (sign. diff. relative to ALL other groups)

Lack of important skills

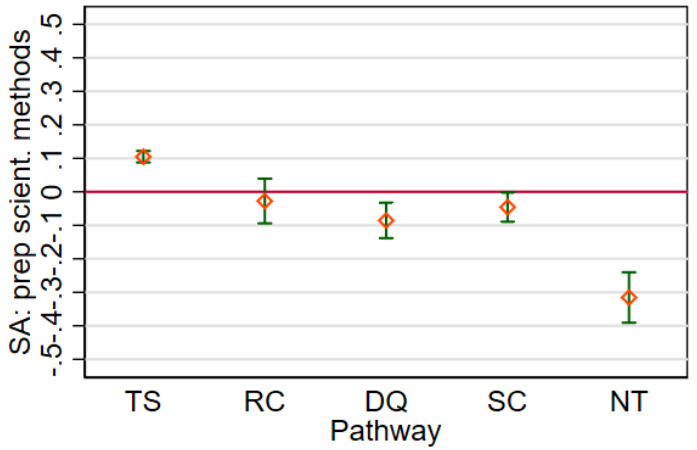
- Similar but reverse pattern

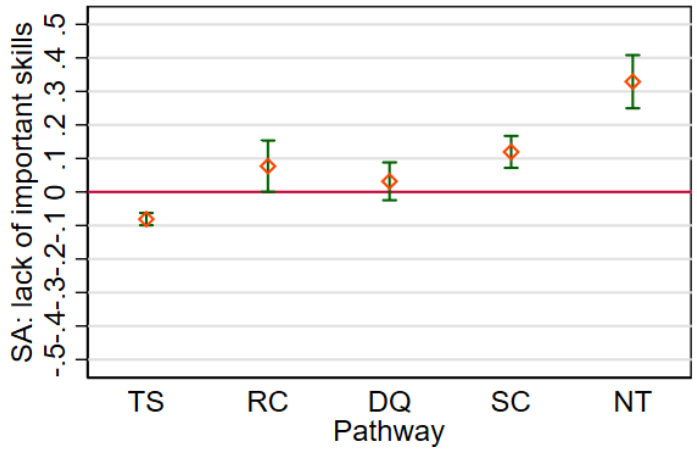
Generally well-prepared

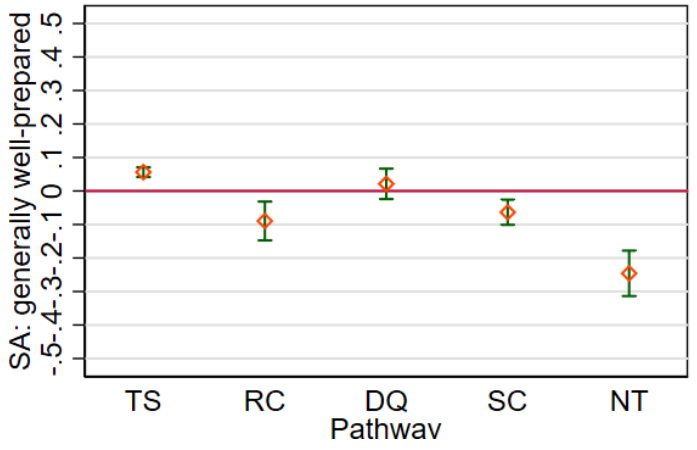
- DQ same level as TS (no sign. diff)

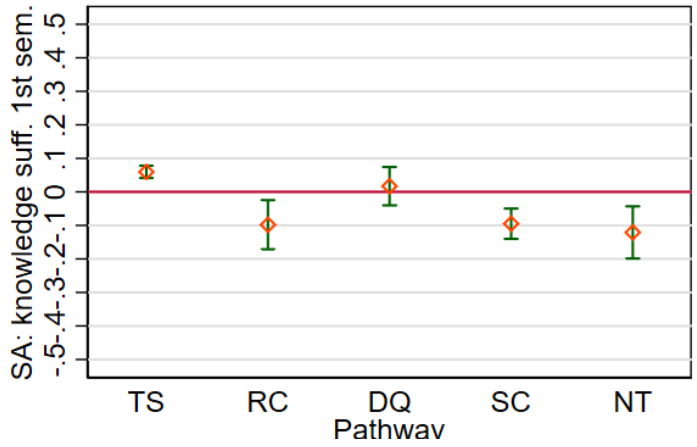
Knowledge sufficient for 1st semester

- Interesting: high deficit-awareness among NT, but also little concerns that preparation might be insufficient



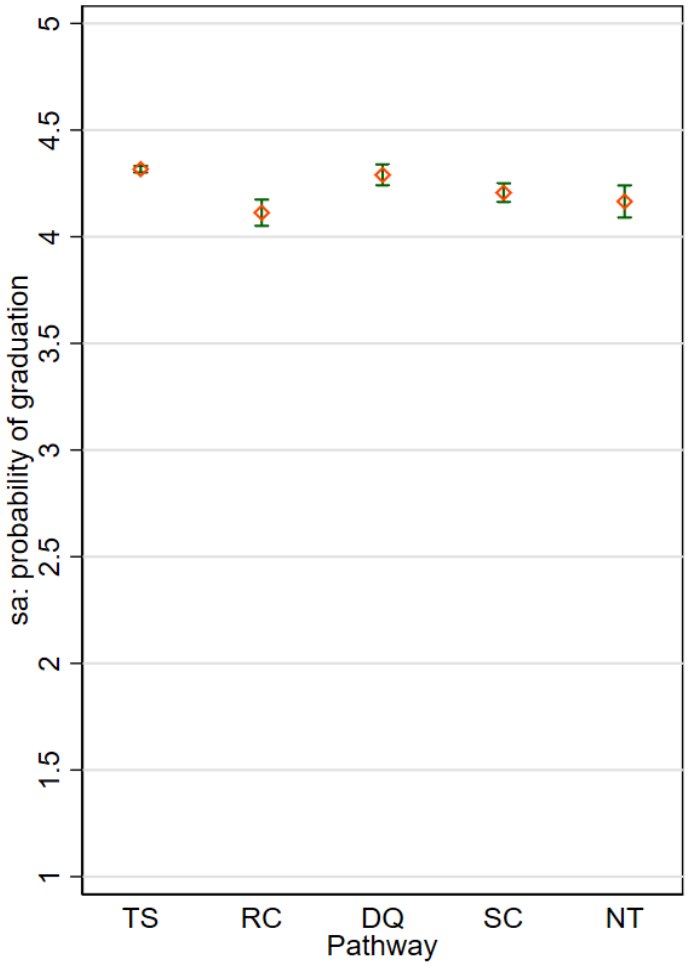


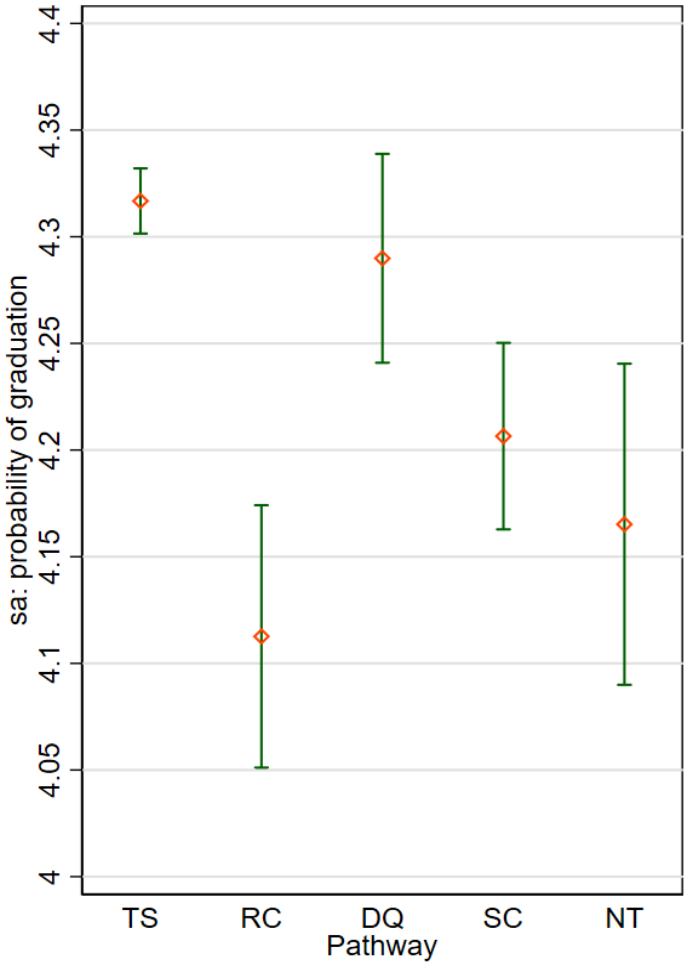




Self-Assessment: Graduation probability

- Likert scale: 1=very unlikely, 5=very likely
- Expectations generally optimistic after first year
- Again: **small but significant** group differences





Summary & Conclusion

- Quantitative overview confirms qualitative findings: **non-linear biographies are associated with (perceived) deficits in academic preparation**

BUT

- Comparison with TS reveals **surprisingly small differences**
- **Optimism** among all groups
- Deficits **must be taken seriously**, but are possibly **not sufficient explanation for higher drop out rate**

Future Research

- **Longitudinal analyses**
- Closer look at **actual** performance, progress & graduation patterns
- Closer look at **resources & restrictions**
  - compensation strategies
  - finances
  - family & work obligations
- Closer look at **double-buffer of vocational skills & knowledge**
  - beneficial effects of **vocational field congruence & work experience**
  - pull-factor **labour market** (return-ticket)

THANK YOU!

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