

Widening access: Perspectives from the teaching profession

Rob Klassen and Lisa Kim

DREAMS workshop
13 February 2017

Four aims of this presentation

1. Examine the rationale for teacher selection
2. Explore the state of teacher selection in the UK
3. Describe new developments in teacher selection
 - Identifying cross-cultural attributes of teacher effectiveness
 - Developing theory-derived attributes
4. Propose next steps in teacher selection research

Average effect for major contributions to learning

Contribution	Effect size (<i>d</i>)
School	.23
Home	.31
Student	.40
Teaching approach	.42
Curriculum	.45

Effect size descriptors for educational outcomes:
small = .20, medium = .40, large = .60

Hattie, J. (2009). Visible learning: A synthesis of over 800 meta-analyses relating to achievement

Average effect for major contributions to learning

Contribution	Effect size (d)
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Teacher characteristics	.49

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Hattie, J. (2009). Visible learning: A synthesis of over 800 meta-analyses relating to achievement

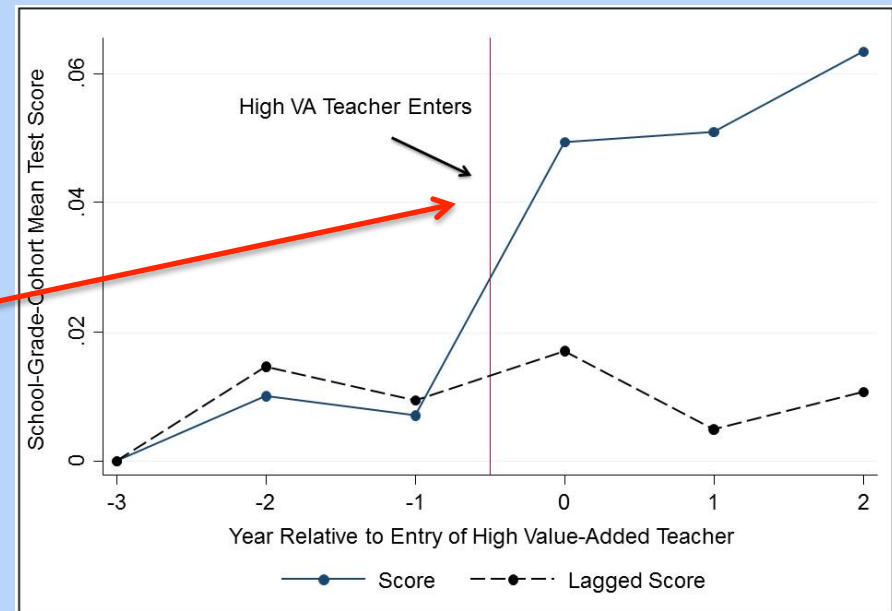
The economic impact of variability in teacher effectiveness

- Value-added analysis targets the causal effects that teachers have on student achievement
- Economic impact of low-quality and high-quality teaching is immense
- The effects of having a teacher who is modestly more effective than another teacher (~ 1 SD in a measure of effectiveness) produces measurable differences in student lifetime earnings
- For the UK, even modest improvements in selection of 24,000 ITT candidates make a significant and noticeable difference to student—and social—outcomes for many years

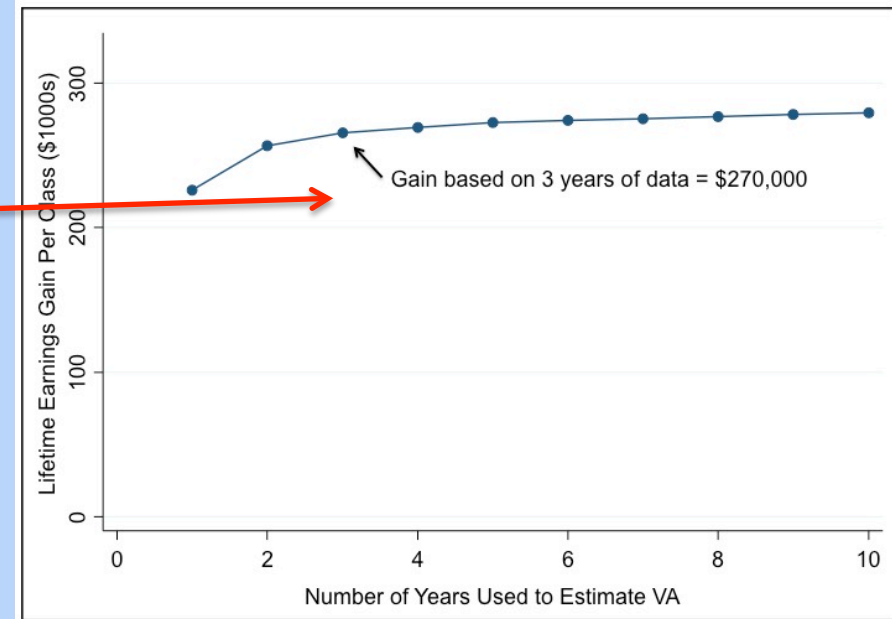
Chetty, R., et al. (2012). Great teaching: Measuring its effects on students' future earnings. *Education Next*.

Hanushek, E. A., & Rivkin, S. G. (2012). The distribution of teacher quality and implications for policy. *Annual Review of Economics*, 4, 131-157.

Effective teachers have an immediate impact



A more effective teacher = \$270,000 lifetime earnings gain per class



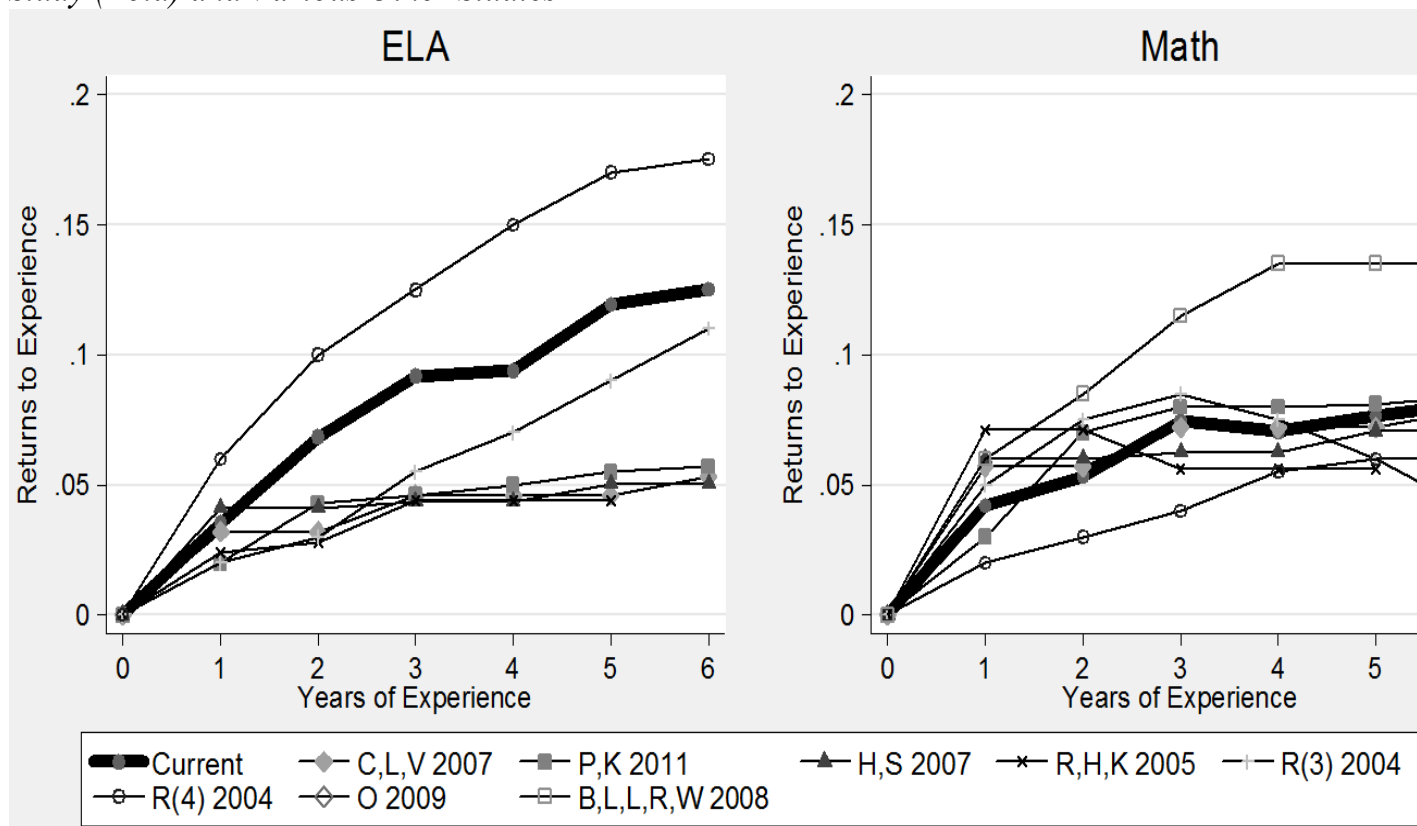
What happens to teacher effectiveness over time?

Well, there's good news and bad news

Good news: Teachers become more effective with experience

Figure 1:

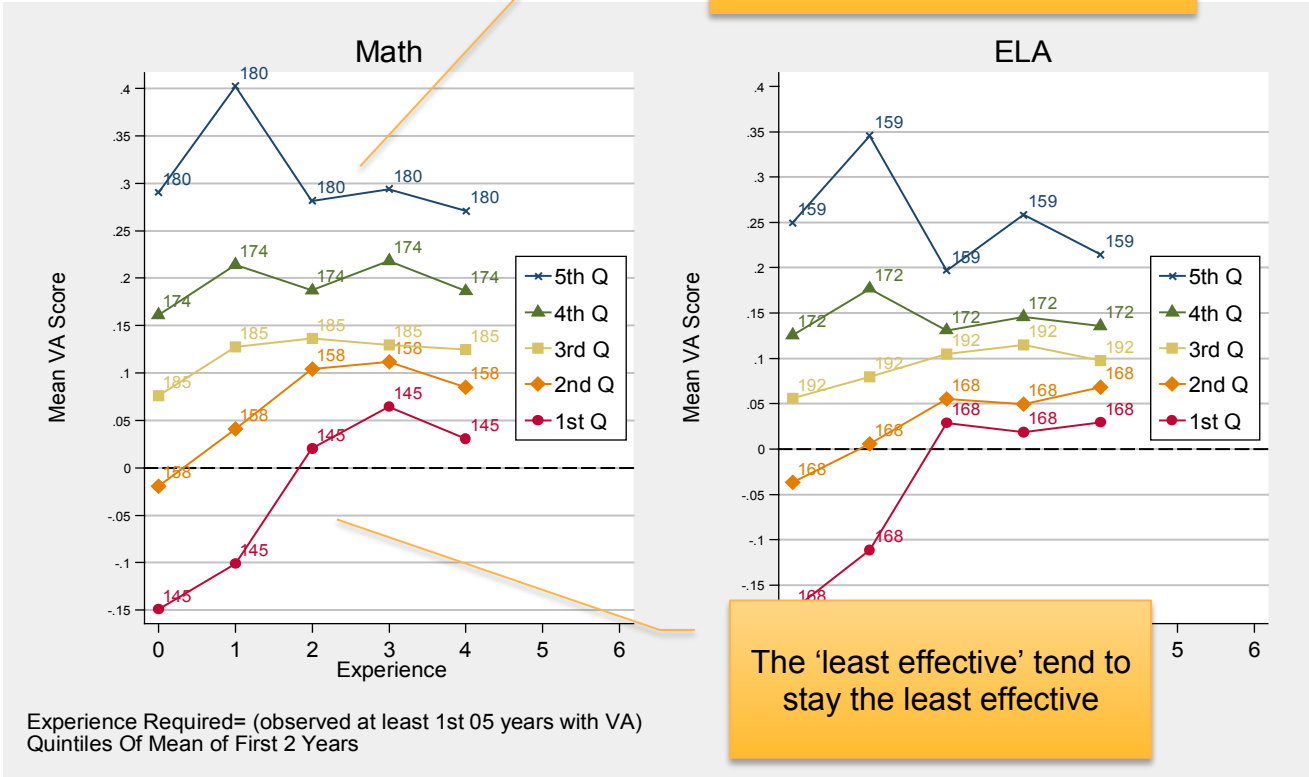
Student Achievement Returns to Teacher Early Career Experience, Preliminary Results from Current Study (Bold) and Various Other Studies



Atteberry, A., Loeb, S., & Wyckoff, J. (2015). *Do first impressions matter? Improvement in early career teacher effectiveness.*

Bad news: Teachers' *relative* effectiveness doesn't change much

The 'most effective' tend to stay the most effective



The 'least effective' tend to stay the least effective

Do teachers' non-cognitive attributes change over time?

- Some non-cognitive attributes develop with training and professional development
 - e.g., self-efficacy and engagement increase with teaching experience (Klassen & Durksen, 2014)
- **BUT** student teachers low in motivation show persistent deficits in motivation in the first 8 years of a career (Watt, Richardson, & Wilkins, 2014)
- **AND** research shows that personality characteristics from childhood are (generally) stable and influence adult outcomes (Spengler et al., 2015)

The selection landscape in England

- 6% of 30,000 places unfilled
- 29% of physics training places unfilled
- (118% of history places filled)
- Academic qualifications: 75% of postgraduate entrants have an upper-second degree or higher (up from 63% in 2011)
- Lack of diversity of teaching workforce

Widening access: The homogeneity of the teaching practice is an international phenomenon

- Ethnicity

theguardian

Teaching profession fails to reflect multi-cultural student population

There is a severe shortage of ethnic minority professionals at every level of education, charity finds



In 2014 just 6% of state primary school teachers were from black, Asian and minority ethnic backgrounds. Photograph: Alamy

Kate Hodge and Sarah Marsh

Thursday 19 November 2015 12.17 GMT

Ethnic minority professionals are under-represented at every level of education, according to a new report from youth employment charity Elevation Networks.

The report, which analysed research on employment in UK state-funded primary and secondary schools, found that last year just 6% of state primary school teachers and 9.9% of qualified and unqualified teachers in maintained secondary schools were from black, Asian and minority ethnic (BAME) backgrounds.

Widening access: The homogeneity of the teaching profession is an international phenomenon

- Ethnicity: 6% BAME teachers and 3% headteachers vs. 28% in student population)
- Gender: teaching workforce is 74% female
- SES: Teachers come from more diverse backgrounds in the UK than in comparator countries
- Selection into initial teacher education shows similar lack of homogeneity in other countries which collect these data (Finland, Ireland, Australia, Canada; however, the problem is less pervasive in the U.S.)

Consequences of a less diverse teacher population

- Educational impact of an absence of teachers from some groups on student from those groups ('role model' effect)
- Educational impact of absence of teachers from some groups on all students' view of a multicultural society
- Diminished influence on educational practice and policy by less well-represented groups

Current state of prospective teacher selection

- There are about 450,000 teachers in mainstream, state-funded schools in England
- About 24,000 newly-qualified teachers enter the profession annually, and about 300,000 teachers enter in other EU countries
- Selection of teachers and prospective teachers is largely “ad hoc” and “un-tested” (Goldhaber, 2014)

(Barely hanging on as part of the EU)



Goldhaber, et al., (2014). *Screen twice, cut once: Assessing the predictive validity of teacher selection tools*. CEDR Working Paper 2014-9. University of Washington., Seattle, WA.

Teacher attrition rates are high and increasing

2/11/2017

Four in 10 new teachers quit within a year | Education | The Guardian

theguardian

Four in 10 new teachers quit within a year

Teachers union launches scathing attack on government's education policy, which has tripled the exodus of newly qualified teachers

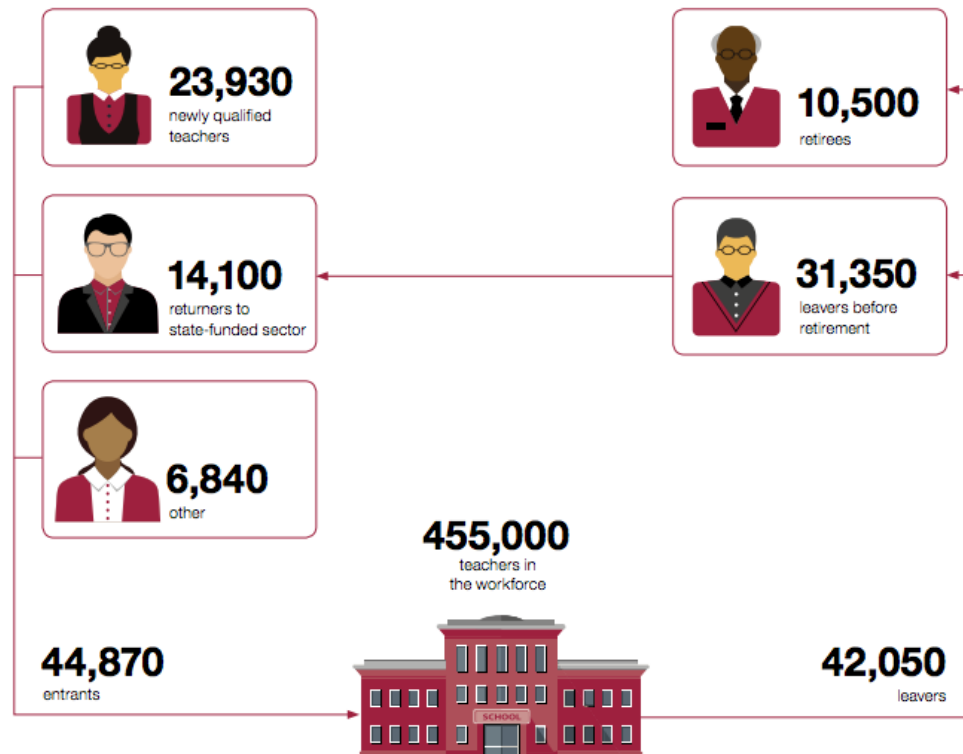


'Teachers are exhausted, stressed and burnt out in a profession being monitored to within an inch of its life.' Photograph: Agencja Free/Alamy

Flows in and out of state-funded schools

Figure 3

Flows into and out of state-funded schools in 2014



Notes

- 1 Other sources include qualified teachers from overseas and trainees who deferred entering the state-funded sector.
- 2 Entrants and leavers are for the period November 2013 to November 2014. The size of the workforce in November 2014 was 455,000.
- 3 The 42,050 leavers include 200 serving teachers who died during the year.
- 4 All figures are full-time equivalent.

Source: Department for Education school workforce data

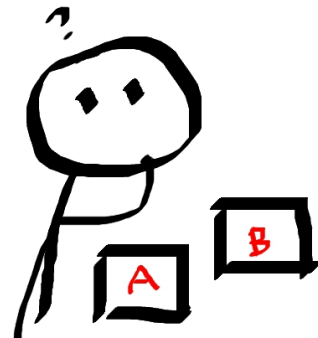
What should we include when we make decisions about selection?

UK House of Commons Education Committee, 2012

We welcome the concept of a test in interpersonal skills. Designing a test to find proxies for teaching aptitude poses a significant challenge. However, other professions and organisations have overcome similar challenges

Pasi Sahlberg, 2015, (Finnish education guru)

Selection to teacher education in Finland focuses on finding those individuals who have the right personality and interpersonal skills... to become lifelong educators



Contributions from the teacher to differences in student outcomes: three factors

	Effect size (d)	Background factors	Cognitive variables	Non-cognitive variables
Location of teacher training	.11	←		
Knowledge of subject	.09		←	
Teacher expectations	.43			←
Teacher-student relationships	.72			←

Hattie, J. (2009). *Visible learning. A synthesis of over 800 meta-analyses*

Improving teacher quality starts with improving selection of potential teachers



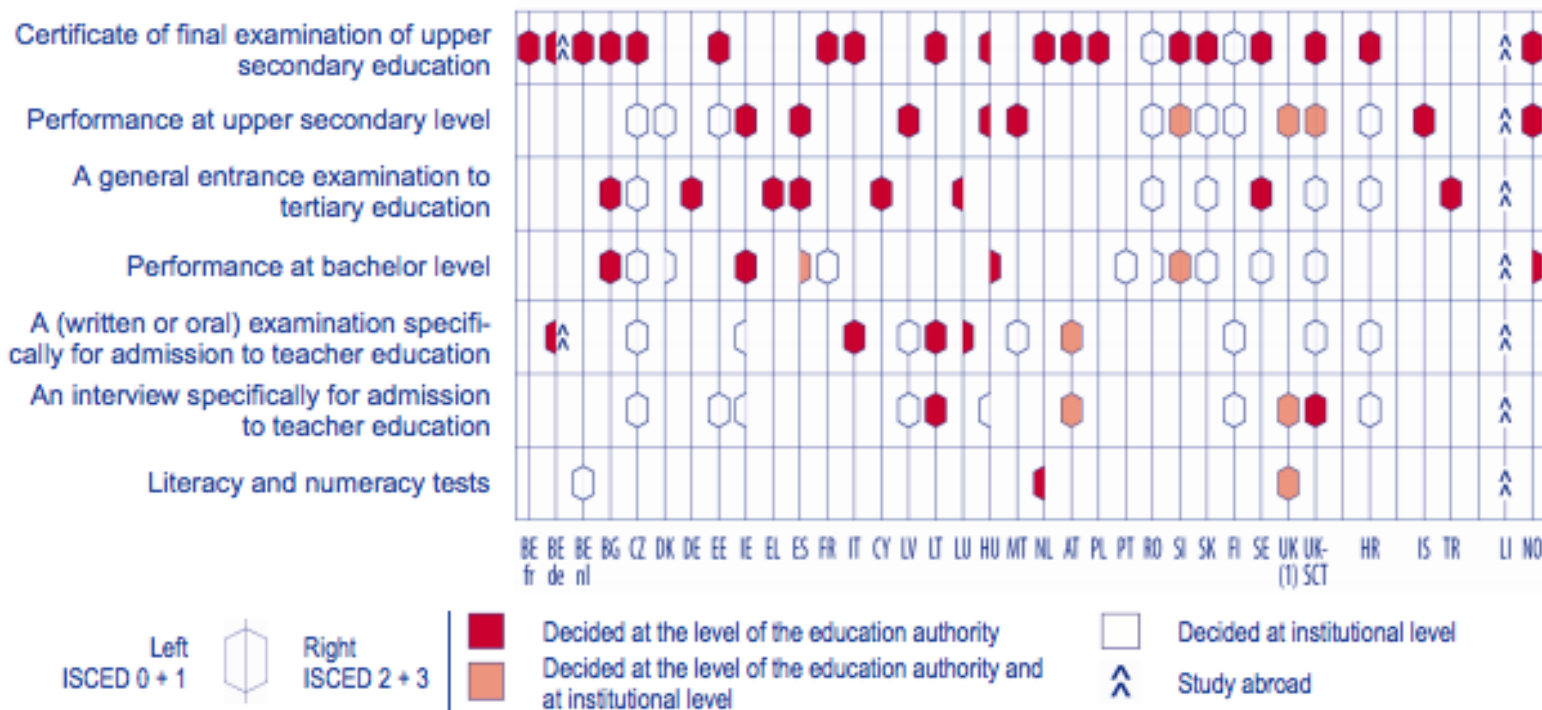
'The Commission is taking stock of the situation regarding the training of teachers within the European Union (EU) and is identifying ways in which the existing arrangements can be improved

'The quality of teaching is a key factor in the achievement of the Lisbon objectives for social cohesion, growth and economic competitiveness'

Eurydice Report: Key data on teachers and school leaders in Europe 2013

Selection procedures across Europe vary across countries

Figure A5: Selection methods/criteria for access to initial teacher education. Pre-primary, primary and general (lower and upper secondary) education (ISCED 0, 1, 2 and 3), 2011/12



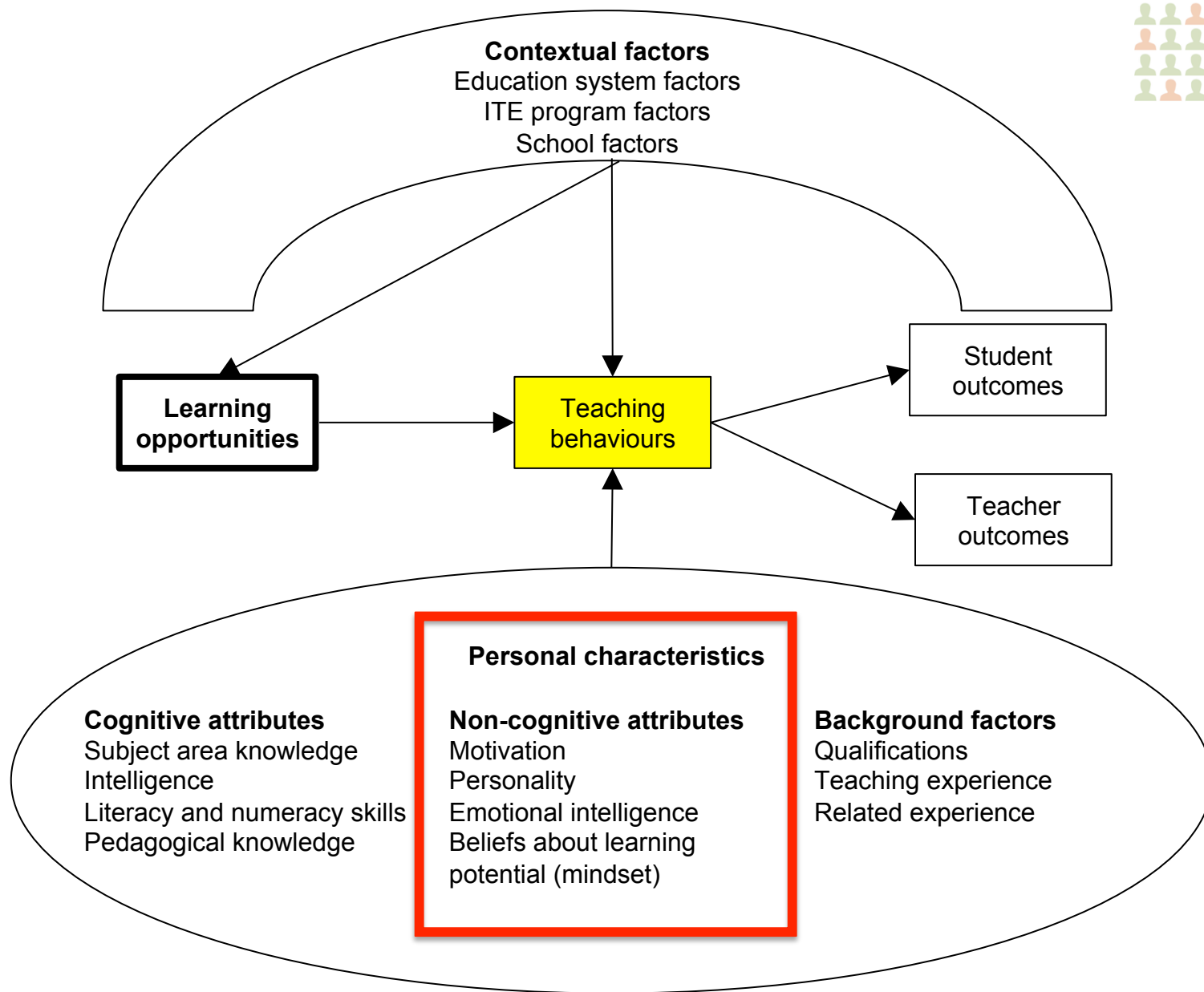
Source: Eurydice.

UK (1) = UK-ENG/WLS/NIR

Selection into teacher education hasn't changed very much (and isn't very evidence-based)

1. Review of background factors (qualifications, experience, references)
2. Evaluation of cognitive factors: evaluation of cognitive abilities, subject knowledge, numeracy and literacy skills
3. Evaluation of non-cognitive factors using interviews and personal statements

But interviews and personal statements are notoriously unreliable and little is known about the fairness and predictive validity of teacher selection methods



Dynamic interaction model of the development of teacher effectiveness

How psychology (and other fields) can address the challenge of teacher selection

1. Organisational psychology

Can provide methodological tools

2. Educational psychology

Can provide useful theories

3. Selection research in business and medicine

Provides a track record of systematic research into selection methods

4. Digital interactive technology research

Can provide directions for next steps

Meta-analysis of teacher selection methods

Aim:

- To assess the validity of the methods used for selection of teachers for employment and prospective teachers entering initial teacher education (ITE) programs in predicting measures of teacher effectiveness
- To propose a theory-informed and practical framework for teacher selection

Klassen, R. M., & Kim, L. E. (2017). *Teacher selection methods: A meta-analysis*. Manuscript under review

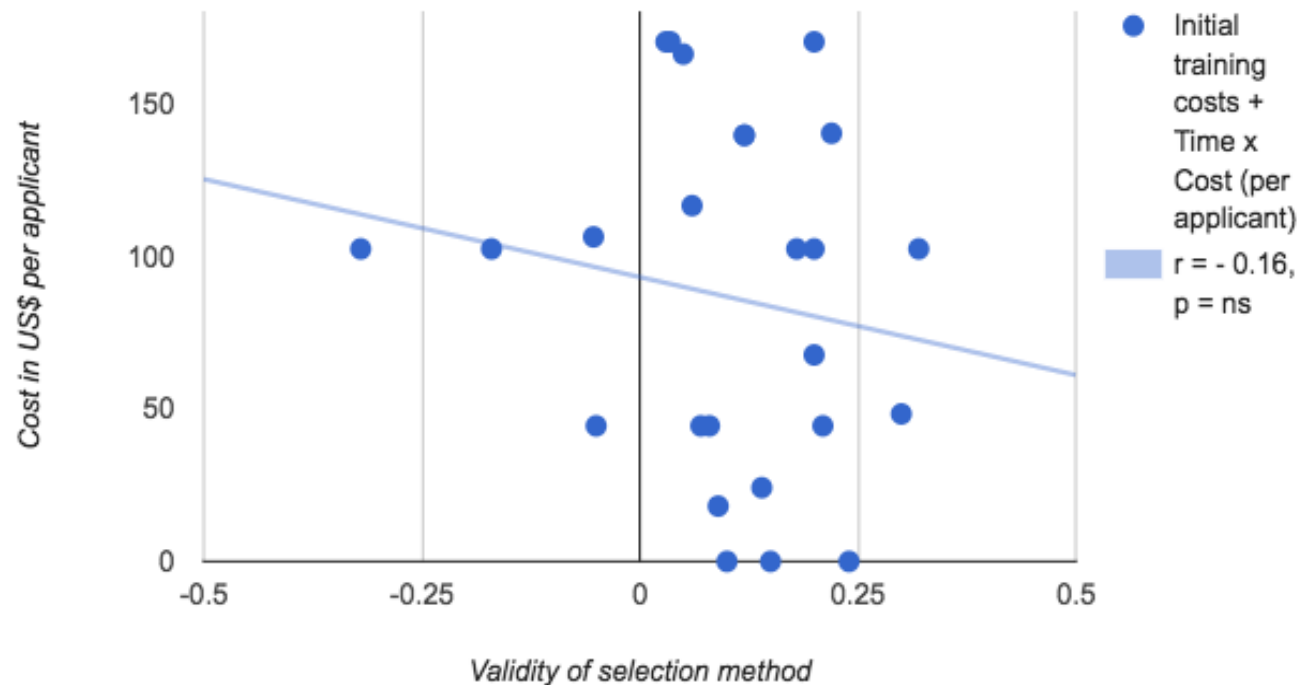
Results (a)

Variable	k	r	CI lower limit	CI upper limit
Overall teacher effectiveness	27	.12	.09	.15
Moderator analysis				
Academic	14	.14	.07	.20
Non-academic	18	.10	.06	.15
Teacher effectiveness measure				
Performance evaluation	17	.14	.08	.20
Student academic achievement	10	.08	-.04	.19
Teacher academic achievement	3	.13	-.06	.31
Absenteeism	2	.09	n/a	n/a
Educational level				
Elementary	9	.12	-.04	.28
Secondary	5	.07	-.14	.29
Mixed	16	.13	.10	.15
Selection type				
ITE	9	.14	.08	.20
Employment	18	.15	.10	.20
Output type				
Journal	11	.13	.09	.18
Dissertation	16	.11	.05	.17

- 27 studies included
- Journal articles, dissertations, and published research reports

Correlation between validity and cost of selection method.

- Mean cost per candidate for selection= \$86.77
- Relationship between cost of method and predictive validity ($r = -.16$, $p = .40$)



Proposed framework for selection of teachers for training and professional practice.

Personal characteristics		
Academic attributes	Non-academic attributes	Background factors
Subject area knowledge Reasoning abilities Literacy and numeracy skills Pedagogical knowledge	Motivation Personality Beliefs about learning Dispositions Interpersonal skills	Qualifications Teaching experience Related experience
<i>Corresponding selection methods</i>		
Academic records Reasoning tests Literacy and numeracy tests	Situational judgment tests Multiple mini interviews Structured interviews	Record checks References

Teacher selection project: Four project phases (2015-2020)

1. Developing selection tools based on practice and theory
2. Exploring longitudinal predictive validity of selection tools
3. Developing video-based (and VR) selection tools to select prospective teachers
4. Creating reliable, valid, and fair tools for selecting school leaders



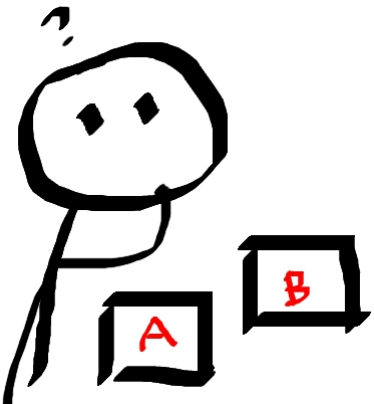
European Research Council

Established by the European Commission



Phase I. Developing teacher selection tools based on practice and theory

Can we integrate inductive and deductive approaches to develop teacher selection methods?



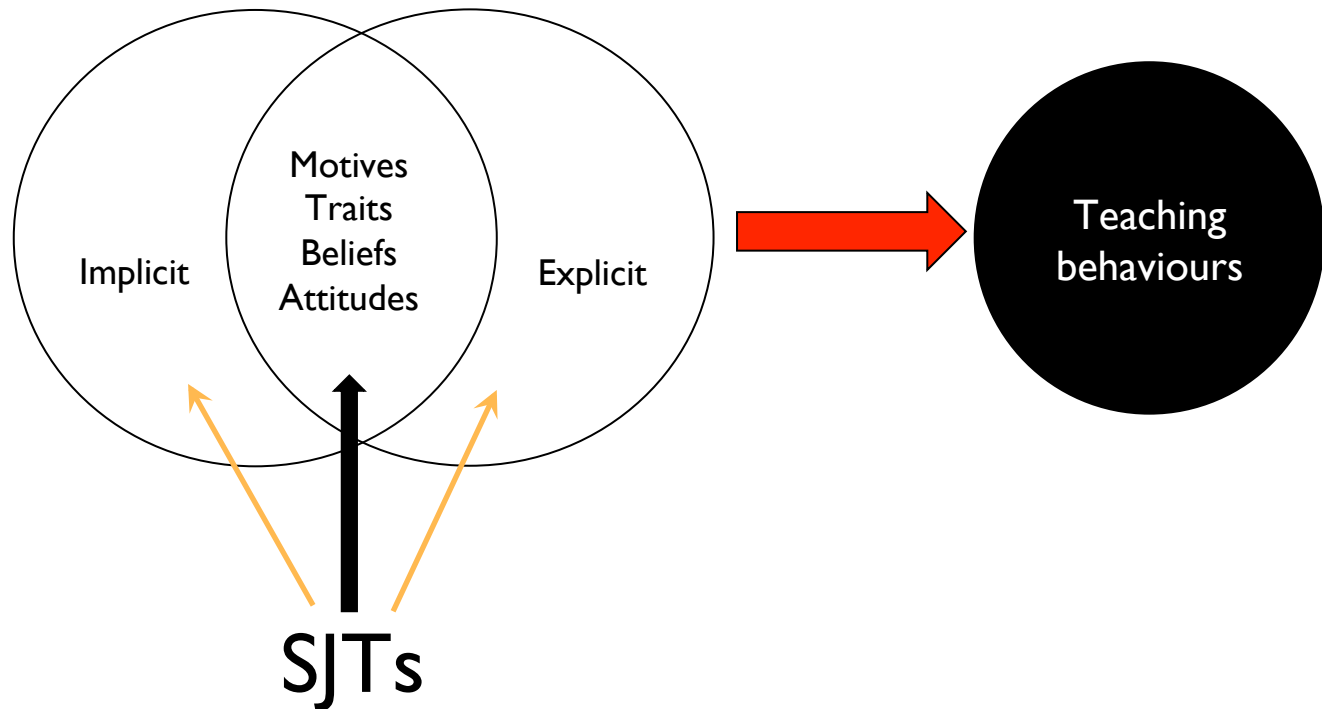
Situational judgment tests (SJTs)

- SJTs are a measurement method designed to assess judgment in work-relevant situations:
 - Present challenging classroom situations
 - Candidates make judgments about possible responses
 - Scored against a pre-determined key
 - **Show fewer inter-group differences than other selection methods
- SJTs often focus on non-cognitive attributes (derived from an inductive or deductive process)

Example. *You're teaching a class when (something complicated and difficult) happens. Rate the appropriateness of the following responses:*

- (a) Panic
- (b) Call your mentor teacher
- (c) Send the children home
- (d) Manage the situation in a competent manner

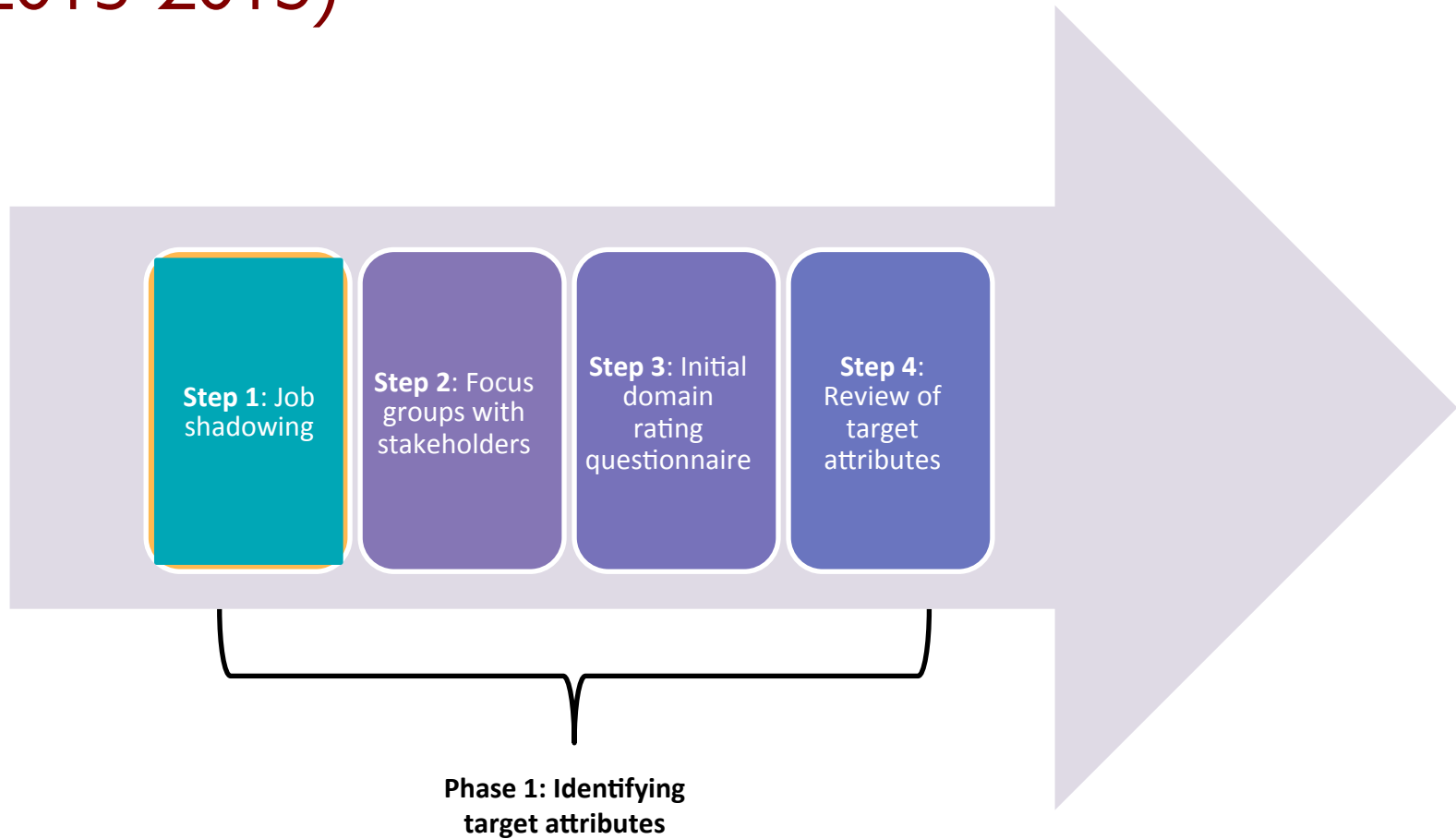
Simplified conceptual model of how SJTs measure implicit non-cognitive attributes



Implicit trait policy:

Our judgments about what we would do in challenging situations reveal our motivation, personality traits, and behavioural patterns (Motowidlo & Beier, 2009)

Inductive development of non-cognitive attributes (2013-2015)

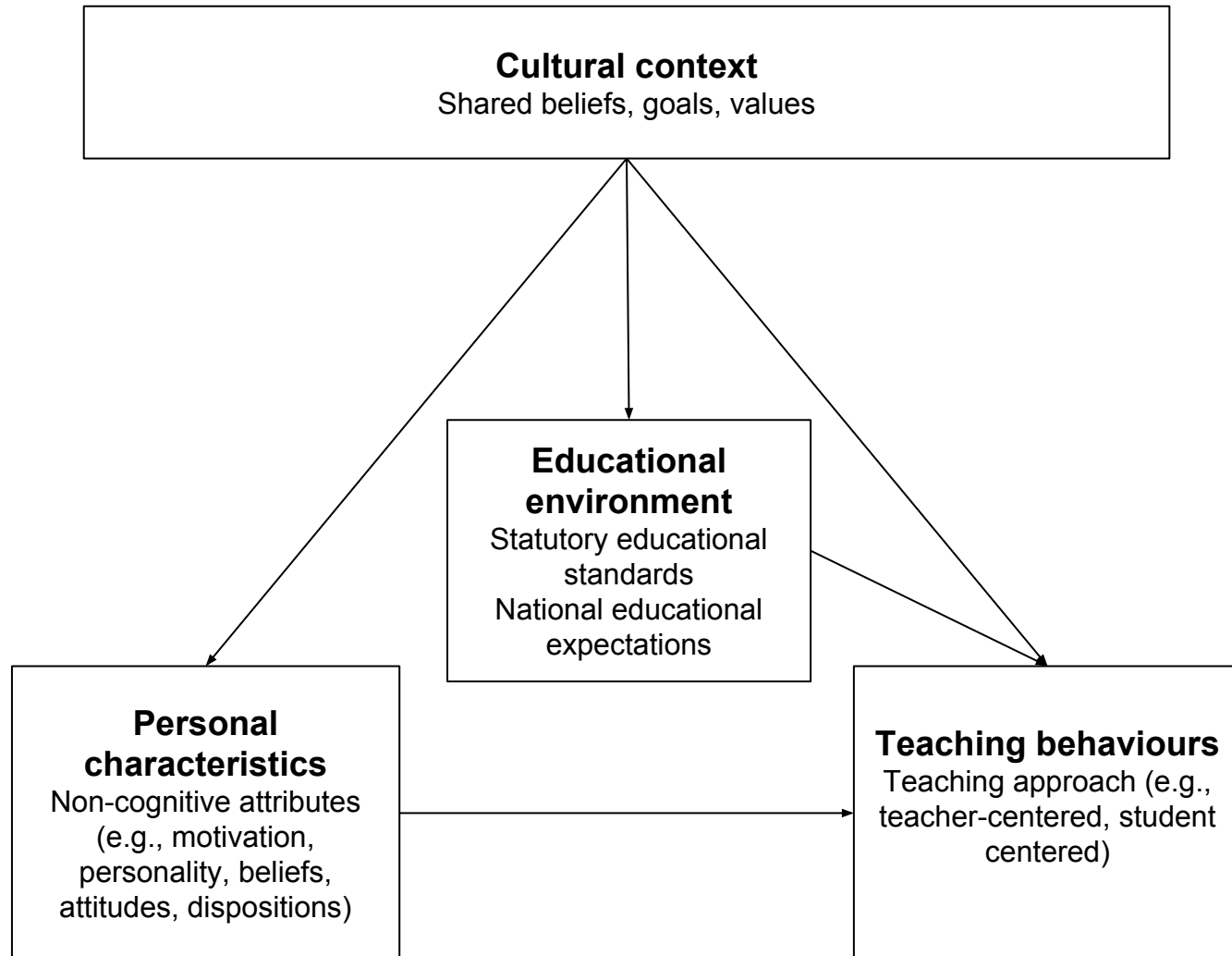


Three inductively-derived non-cognitive domains (2013-2015)



Are these domains culturally invariant?

Cultural context influences non-cognitive attributes



Non-cognitive domains across cultures (2015-2020)



Finland

Cooperation and
fostering community

Candidate recognizes
the importance of
building community
within schools through
cooperation with
colleagues and families



Australia

Rural and remote
sensibility

Candidate recognizes
the importance of
building community
within schools through
cooperation with
colleagues and families



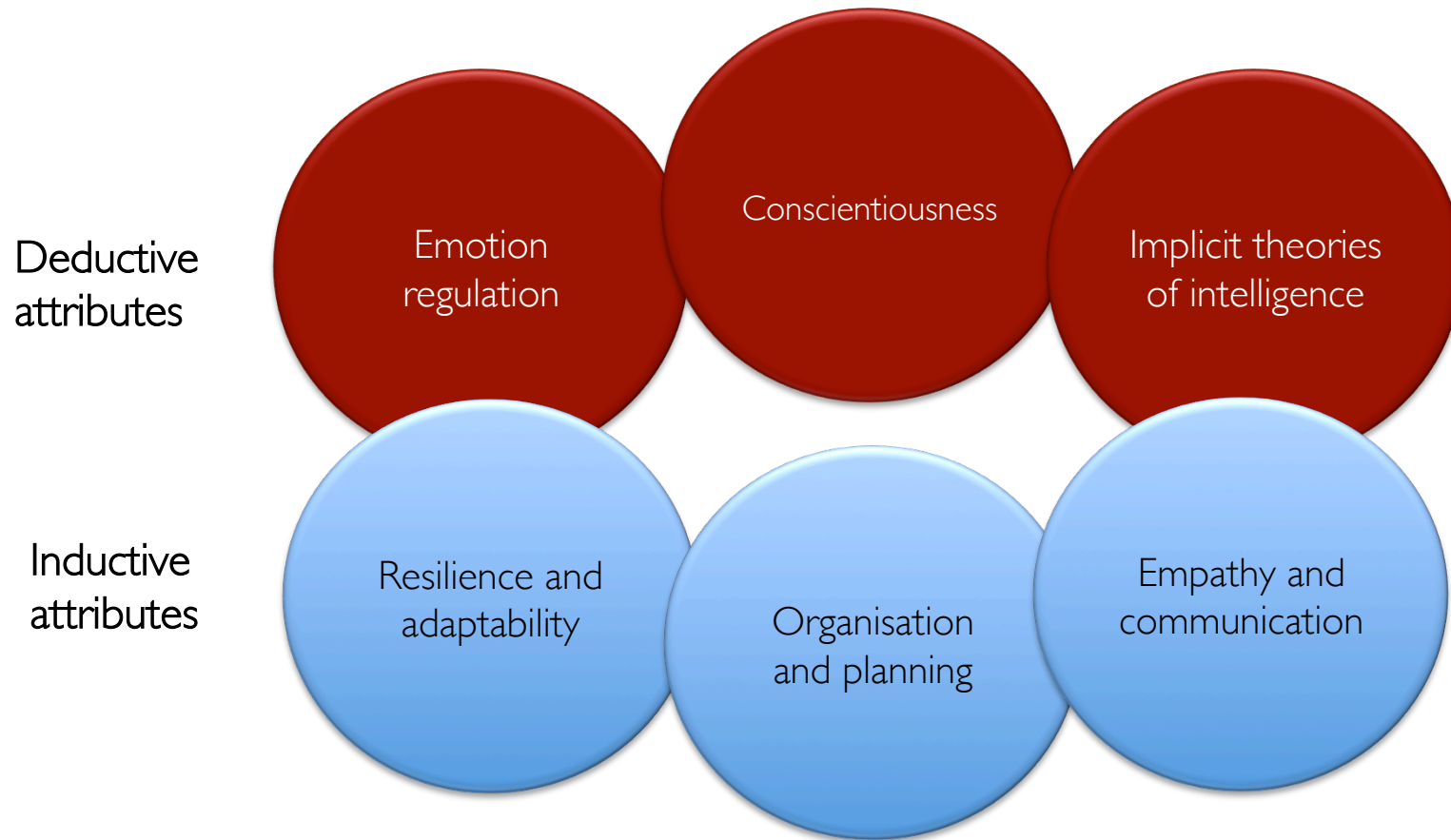
Oman

Professional values and
ethics

Consideration of Omani
and Islamic values;
consideration of
professional ethics

Klassen, R. M., Kim, L. E., Metsäpeltö, R.-L., Poikkeus, A.-M., Durksen, T., L., & Al Hashmi, W. (2016). *Is 'good teaching' universal? Cultural influences on the desired non-cognitive attributes of prospective teachers in four countries*. Symposium presented at the annual meeting of EARLI SIG 11, Zurich, Switzerland.

Integrating inductive and deductive non-cognitive attributes (2015-2020)



Proof-of-concept studies 2013-2016

Reliable	→	Yes (high α)
Valid	→	Yes (concurrent validity)
Fair	→	Yes (no gender Δ^*)
Acceptable	→	Yes (+ applicant feedback)
Easy-to-use	→	Yes (machine scorable)

*In Oman F>M

Proof-of-concept work completed in UK (Universities of York, Newcastle, and Cambridge) and Canada (Edmonton, Alberta and Vancouver, British Columbia)

Klassen, R.M., Durksen, T.L., Rowett, E., & Patterson, F. (2014). Applicant reactions to a situational judgment test used for selection into initial teacher training. *International Journal of Educational Psychology*, 3, 104-125.

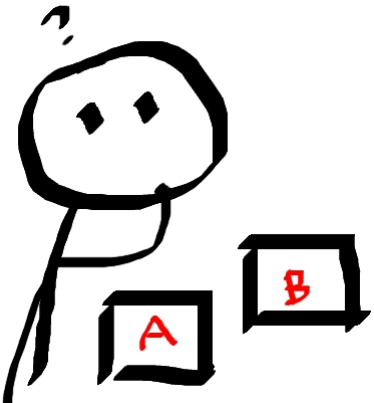
Klassen, R. M., Patterson, F., Rowett, E., Durksen, T. L., Kim, L. E., Warwick, J., Warwick, P., & Wolpert, M. A. (2017). Developing a proof-of-concept selection test for entry into primary teacher education programs. *International Journal for Assessment and Testing in Education*, 4, 96-114.

Phase 2. Longitudinal predictive validity of selection methods

Challenge: *How best to measure teacher effectiveness?*

Currently: Evaluating measures of teacher effectiveness (supervisor observations, student ratings, teacher self-report) for implementation in 2017-2018

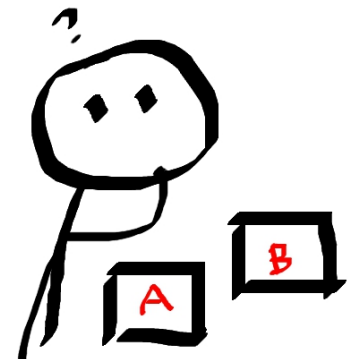
(Standardised outcome measures: CLASS teacher observation, Tripod student observation, student value-added achievement)



Phase 3. Developing video simulations for teacher selection

Challenge: *Can digital technologies improve fidelity (and predictive validity) of selection tools?*

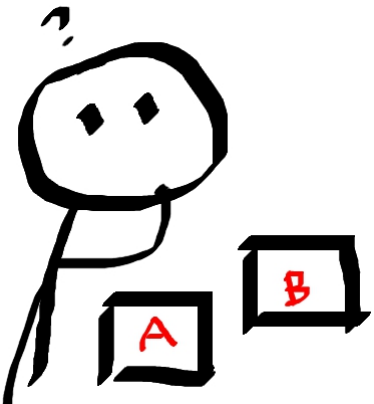
Currently: Collaborating with Digital Creativity Labs at York to develop and test video SJTs



Phase 4. New approaches to selecting school leaders

Challenge: Can we improve the selection of school leaders, worldwide?

Currently: Building network with international partners and identifying funding for 2018/2019



Summary: Five key points

1. Choosing the right candidates for teaching is important
2. The evidence base for current teacher selection methods is not very strong
3. The homogeneity of the teaching profession is an international phenomenon
4. We can reliably and validly evaluate non-cognitive attributes for selection of new teachers
5. Research in the Education Department at York is focused on harnessing multiple disciplines to build knowledge and improve educational practices locally and internationally

Funding

1. Social Sciences and Humanities Research Council of Canada (2012-2015)
2. University of York External Engagement Award (2012-2013)
3. European Research Council (2015-2020)
4. Saudi Arabia Education Evaluation Commission (pending): *New approaches to developing teacher certification tests*
5. ERC Proof-of-concept grant (submit 2017): *Developing selection tools for educational leadership*
6. U. S. Institute of Education Sciences (submit 2018): *Evaluating teachers' non-cognitive attributes across cultural settings*

Relevant publications

- Klassen, R. M., Patterson, F., Rowett, E., Durksen, T. L., Kim, L. E., Warwick, J., Warwick, P., & Wolpert, M. A. (2017). Developing a proof-of-concept selection test for entry into primary teacher education programs. *International Journal for Assessment and Testing in Education*, 4, 96-114.
- Klassen, R. M., Durksen, T. L., Patterson, F., & Rowett, E. (in press). Filtering functions of assessment for selection into initial teacher education programs. In D. J. Clandinin & J. Husu (Eds.), *International handbook of research in teacher education*. Thousand Oaks, CA: Sage.
- Klassen, R. M., & Kim, L. E. (2017). Assessing critical attributes of prospective teachers: Implications for selection into initial teacher education programs. Accepted in *British Journal of Educational Psychology*.
- Klassen, R. M., & Kim, L. E. (2017). *Teacher selection methods: A meta-analysis*. Manuscript submitted for publication.
- Klassen, R. M., Kim, L. E., Metsäpeltö, R.-L., Poikkeus, A.-M., Durksen, T., L., & Hashmi, W. (2017). *Is 'good teaching' universal? Cultural influences on the desired non-cognitive attributes of prospective teachers in four countries*. Manuscript in preparation.
- Klassen, R.M., Durksen, T.L., Rowett, E., & Patterson, F. (2014). Applicant reactions to a situational judgment test used for selection into initial teacher training. *International Journal of Educational Psychology*, 3, 104-125.
- Klassen, R. M., & Tze, V. M. C. (2014). Teachers' self-efficacy, personality, and effectiveness: A meta-analysis. *Educational Research Review*, 12, 59-76.



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