

Study addresses one of the most challenging problems in educational policy and practice

October 31 2019



Credit: CC0 Public Domain

Language proficiency has an important influence on learners' ability to answer scientific questions a new joint study by Lancaster and Sheffield Universities has found.

And this is particularly challenging for children from homes where English is not their [first language](#) -now a significant and increasing proportion of classrooms worldwide.

The changing nature of assessment, such as the Next Generation Science Standards, also brings about further [language](#) demands on those students.

Providing English-language learners (ELLs) with equal assessment opportunities is proving particularly difficult and is, says the report, one of the most challenging problems in educational policy and practice.

'Mitigating the effect of language in the assessment of science: A study of English-language learners in primary classrooms in the United Kingdom' by Dr. Oksana Afitska from Lancaster University and Dr. Timothy Heaton, of the University of Sheffield, is just published in the journal, *Science Education*.

The authors warn that teachers and assessors must be responsive to new practices and that education professionals should play an important role in promoting discipline-specific learning through appropriate, formative and equal teaching and assessment methods.

And this, adds the report, includes recognising the multiple educational, linguistic and sociocultural dimensions that ELLs bring into the classroom.

Dr. Afitska and Dr. Heaton analysed the performance of 485 students, both English native speakers (ENSs) and ELLs, across five UK schools in the seven to eleven year age group on standardised science tasks.

Results showed that while the ELLs persistently performed more poorly than their English native speaking peers, the gap between them depended significantly on assessment traits.

ELLs were particularly disadvantaged when responses required active language production and/or when assessed on specific scientific vocabulary.

"These conclusions lead us to suggest that ELLs may often possess the intended underlying scientific understanding but lack the required vocabulary and language skills to demonstrate it appropriately during assessment," said Dr. Afitska.

In one of the formal [assessment](#) tasks cited in the report, youngsters were invited to give one feature of a penguin and describe how it helped the penguin live in its environment.

One ELL child had written a 'fluffy tummy to help keep it warm'. However, this did not meet any of the required answers that included 'thick feathers' or 'fur/hair/thick coat'. The child did not get any marks.

"The consequences of [poor performance](#) in these tests are highly significant for a learner," adds the report.

"Potentially influencing future opportunities and the direction of study at postsecondary education levels. Indeed, poor performance can affect a student's perception of themselves as a good Science, English or Mathematics learner. It may also lead to a student being streamed into a lower ability group or class or moved to a more vocational line of study that does not provide such an academically challenging curriculum.

"Addressing this issue is, therefore, a key step if we wish to tackle the current under-representation of linguistically diverse learners in STEM postsecondary education."

More information: Oksana Afitska et al, Mitigating the effect of language in the assessment of science: A study of English-language

learners in primary classrooms in the United Kingdom, *Science Education* (2019). [DOI: 10.1002/sce.21545](https://doi.org/10.1002/sce.21545)

Provided by Lancaster University

Citation: Study addresses one of the most challenging problems in educational policy and practice (2019, October 31) retrieved 25 April 2024 from <https://phys.org/news/2019-10-problems-policy.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.