
DCU
Ollscoil Chathair Bhaile Átha Cliath
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Multiples, means, and multiple meanings: talking about maths through Irish Sign Language
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A bit about me

A bit about our glossary project

A bit about being a WIR – Q&A

OÉ Gaillimh
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The ISL STEM Glossary Project

Background

- 4226 people in the Republic of Ireland use Irish Sign Language at home (CSO, 2017)
- Roughly 5000 DHH children in receipt of services in education (pre-school through university)
- 2 Schools for the Deaf
- 8 mainstream schools with designated classes for DHH children

What makes a sign in Sign Language?

- Fingerspelling

Sign = handshape + rule

- Sign =
  - Handshape (phoneme) +
  - Phonological Rule (orientation, location, movement)
  - Non-manual markers

ISL STEM Glossary Project

- Science Rising campaign which aims to "provide the tools for everyone in Ireland to be able to talk about science" (http://sciencerising.sfi.ie/, 2017).

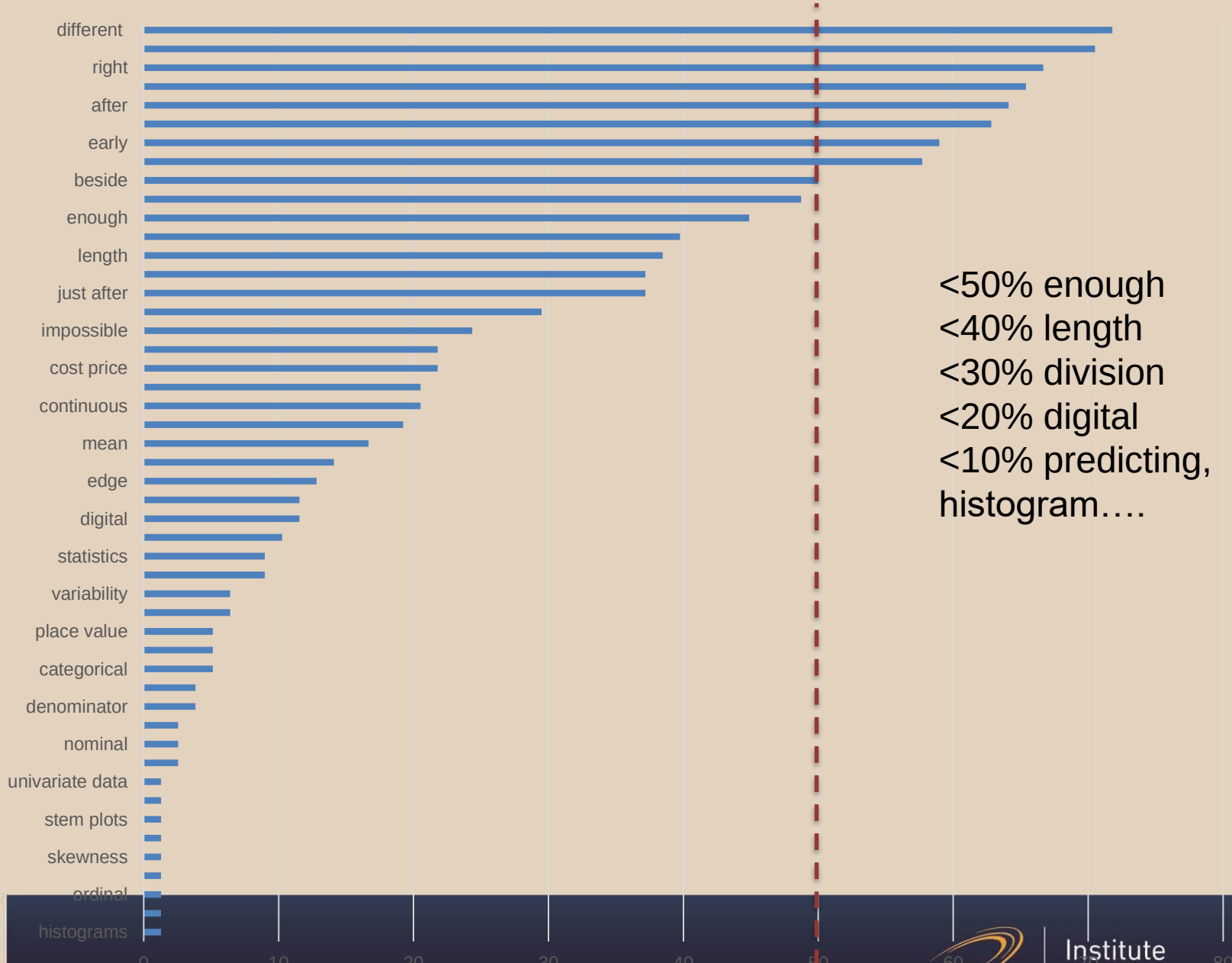
- But do all people have equal access to those tools…?

Two problems with STEM terms…

1. “Spoken language lexicons for technical terms in the Science, Technology, Engineering and Math (STEM) disciplines are well standardized. However, in sign language communities, **signs for many of these words and concepts either do not exist** or are not sufficiently standardized”. (Poor, N.D)

2. Where they do exist, parents, teachers and interpreters often lack access to these when they are learning sign language.

% of participants who stated they had an ISL sign for each term before the evaluation.



<50% enough
<40% length
<30% division
<20% digital
<10% predicting, histogram….

Inter-quartile range

Standard deviation

Mean Median Mode

The problem with initialising…

"For example, the signs for **exothermic** and **endothermic** are both based on the letter E with specific lip patterns…As deaf children at secondary school go from subject to subject they come across more and more initialised, English influenced vocabulary, e.g. E for **Evaporation**, for **Energy**, for **Effect**, etc." (Cameron, Quinn & O'Neill, 2012: 10)

What it would be like for hearing students…

If you calculate the M- here, you can see that it is much higher than the M-, so it is likely that this data set contains an extreme value. The M- is particularly helpful if you have categorical data.

If you calculate the mean here, you can see that it is much higher than the median, so it is likely that this data set contains an extreme value. The mode is particularly helpful if you have categorical data.

Fingerspelling, initialisation, or improvisation…?

What happens in practice…

"Those who sign these terms are often forced to create the signs ad hoc. Two difficulties arise with this: a) depending on the signers' skill in the relevant languages, these signs may **lack semantic accuracy** and specificity; and b) the **signs are often different** from one teacher, interpreter or tutor to the next" (Poor, N.D.)

The end result…?

"For the deaf student, this is extremely problematic. If a sign lacks semantic accuracy and specificity, the student is getting incomplete and/or erroneous information. If a **technical term is signed differently between classes, the student must cobble together the various bits of meaning received and hope that the resulting understanding is correct**." (Poor, N.D)

“Even when this process is successful, the deaf student has been forced to navigate a jigsaw puzzle of lexical confusion, while hearing peers are free to attend exclusively to course content.” (Poor, N.D.)

The Team

Science Foundation Ireland

The Glossary

- over 200 videos
- over 100 terms
- 25 newly coined terms

Click here ☺

Key principles

- Morphological links (statistics)
- Applicable from simple to complex
- Context dependency (e.g. length, width, height)
- Semantically independent (e.g. heavy, heavier, heaviest)
- One sign-one concept, rather than one sign-one word. (e.g. mean)


Thank you
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