September 27, 2023

NUMERACY-MEETS NEWSLETTER

Teaching Numeracy to People with Language Needs

Emergent Bi/Multilingual Learners of English in Ireland

Increased diversity among the Irish population since 2001 (McGinnity et al., 2018) has been accompanied by an increase in the number of emergent bi/multilingual learners of English nationwide. In 2011, 514,068 individuals spoke a language other than Irish or English at home (CSO, 2013), but by 2022 this number had increased by 46% to 751,057 (CSO, 2023). Findings from the Census (2023) reveal that:

- 83% of immigrants indicated that they speak English 'well' or 'very well' but this varies by nationality.
- Immigrants from Malta (98%), Denmark (97%), and South Africa (96%) were most likely to indicate that they spoke English 'well' or 'very well'.
- 57% of immigrants from Moldova, 69% of immigrants from Syria, and 71% of immigrants from China living in Ireland speak English 'very well' or 'well'.

Did you know?

Latest figures from the CSO (2023) show that:

- 84,613 Ukrainian nationals had received Personal Public Service Numbers in Ireland by 6th June, 2023.
- 56% of Ukrainian nationals in Ireland say they do not speak English well or do not speak Engish at all.
- 16,504 Ukrainian nationals are in further education and training courses in Ireland.
- 20,996 Ukrainian nationals seeking employment see lack of English language proficiency as a challenge.

> "Mathematical knowledge is ingrained in language, and teaching numeracy requires the use of literacy skills"
>
> (Condelli, 2006, p. 52)

Implications for Numeracy Educators

Mathematical proficiency requires students to learn mathematical vocabulary (Riccomini et al., 2015), as research has shown that being able to understand mathematical language is a strong predictor of students' success in mathematics (Jourdain & Sharma, 2016).

- Mathematics learning involves moving from informal everyday language to precise formal language. However, colloquial language can enrich conceptual understanding (Ingram et al., 2023).
- Translanguaging, or using a student's full linguistic repertoire, is a resource for mathematics learning (Maldonado Rodríguez & Krause, 2020).
- Students speaking multiple languages in the same classroom may act as a resource for supporting student understanding, as different terms in different contexts and languages can provide students with insight into mathematical concepts (Ingram et al., 2023).
- It is important to introduce technical terms, but students can reveal their emergent thinking through informal language (Ingram et al., 2023).
- Games such as 'sometimes, always, never' can be used to establish maths routines (Ingram et al., 2023).

Read the following statements and decide if they are sometimes, always or never true.

Statement	Sometimes	Always	Never
You get a bigger number when you multiply two natural numbers together?			
Adding two even numbers gives an odd number?			
You get an even number when you multiply a number by 3?			

Supporting Emergent Bi/Multilingual Learners of English in the Numeracy Classroom

Numeracy practitioners can support emergent bi/multilingual learners of English in a variety of ways. They can:

- Help students to develop basic interpersonal communication skills and cognitive/academic language proficiency by encouraging them to communicate in scaffolded language (Caniglia, 2018), that is specifically chosen, used and recalled frequently by students and teachers until it can be used independently in an unscaffolded way.
- Provide opportunities for rich discourse (Ingram et al., 2023), that allows students to practice their functional mathematics skills by asking and answering questions and engaging in any type of spoken interaction, i.e. role playing, interviews and games (Canilglia, 2018).
- Move from focusing on low-level mathematical literacy, i.e. defining words and performing computations, to focus on conceptual understanding and mathematical practices and discourse (Moschkovich, 2021) by integrating the teaching of content and language.
- Encourage emergent bi/multilingual leaners of English to use a variety of representations, including "gestures, drawings, diagrams, manipulatives and technology" to represent mathematical solutions and communicate their thinking (National Council of Supervisors of Mathematics and TODOS, 2021, p. 3).
- Acknowledge that emergent bi/multilingual learners of English often use their first language as well as English when engaging in mathematics and encourage them to do so (Clarkson, 2007).
- Raise students' language awareness by comparing and contrasting language pieces (Erath et al., 2021).

Breakout Room

1. How do you support emergent bi/multilingual learners of English in your classroom?
2. What strategies, if any, do you use to develop your students' mathematical vocabulary?

Students can improve their mathematical vocabulary through fun activities like puzzles and games. Can your students use their numeracy and English language skills to solve "The Bridge Riddle?"

Click Here

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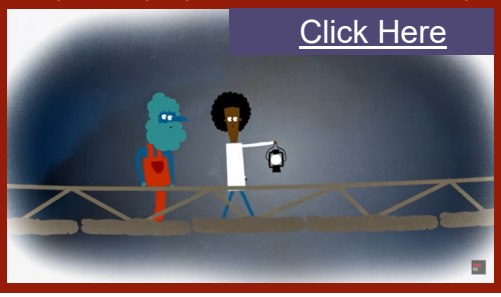

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