MathTASK
Transforming Aspirations into Strategies In Context
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CAPTeaM
Challenging Ableist Perspectives on the Teaching of Mathematics
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What is MathTASK?
- MathTASK is a collaborative research and development programme on secondary mathematics teachers' pedagogical and mathematical discourses and the transformation of teacher aspirations into pedagogical practice.
- Research acknowledges the overt discrepancy between theoretically and out-of-context expressed teacher beliefs about mathematics and pedagogy and actual practice. Within mathematics education, several works explore the use of specific teaching cases, particularly in teacher education.
- Our research sets out from the assumption that teachers' mathematical and pedagogical discourses differ and re-examined and explored in situation-specific contexts.
- We design situation-specific tasks and then use them for research, teacher education and professional development purposes.

Strand 1
Mathematical thinking
(e.g. pedagogical practices concerning the teaching of specific mathematical topics)

Strand 2
Classroom management and mathematics learning
(e.g. interference of disruptive behaviour with aspirations for high quality teaching)

Strand 3
CAPTeaM: Changing Ableist Perspectives on the Teaching of Mathematics
(e.g. inclusion of disabled learners in the mathematics classroom)

Type I: Engage teachers with reflection on learning incidents that feature participation of disabled learners in classroom activities; invite written responses, discuss.

Type II: Engage teachers with mathematical activities while having limited auditory or visual access; reflect on new forms of mathematical communication; discuss.

Strand 4
The role of digital technology and other resources in the teaching and learning of mathematics (e.g. shifts in mathematics teachers' practices when they use technology)

Impact on teachers and teaching
- workshops
- summer schools
- professional conferences
- school and university based PD sessions

Collaborators
Brazil
Greece

Selective publications

What are situation-specific tasks?
- Tasks that engage teachers with classroom situations which:
  - are hypothetical, yet data grounded and likely to occur in actual practice,
  - concern seminal learning and teaching issues as highlighted in prior research and/or experience,
  - have purpose and utility, particularly in eliciting evidence of teachers' pedagogical and mathematical discourses in the contexts of pre- and in-service teacher education and research.

Theoretical construct I: Characterising mathematics teachers' warrants
We identify how teachers warrant the choices they make in the midst of mathematics lessons:
- A priori warrant: resorting to the mathematical theorem or definition (a priori-epistemological); resorting to a pedagogical principle (a priori-pedagogical)
- Institutional warrant: justifying a pedagogical choice on the grounds of it being recommended or required in a textbook (institutional-curricular); or, on the grounds that it reflects the standard practices of the mathematics community (institutional-epistemological)
- Empirical warrant: citing a frequent occurrence in the classroom (according to the arguer's teaching experiences, empirical-professional) or resorting to personal learning experiences in mathematics (empirical-personal)
- Evaluative warrant: justifying a pedagogical choice on the grounds of a personally held view, value or belief

Theoretical construct II: Diagnosing mathematics teachers' competences
We diagnose teachers' competences as evident in their responses to the Tasks in relation to four key characteristics:
- Consistency: how consistent a response is in the way it conveys the link between the respondent's stated beliefs and their intended practice
- Specificity: how contextualised and specific a response is to the teaching situation in the task
- Reification of pedagogical discourse: how a response evidences reified pedagogical discourse in relation to the theory and methods of mathematics education and an academic discipline
- Reification of mathematical discourse: how a response evidences reified mathematical discourse in relation to the theory and methods of mathematics as an academic discipline

Theoretical construct III: Characterising teachers' reflections on an inclusive mathematics classroom
We characterise teachers' reflections evidenced in their responses to CAPTeaM Type I and Type II Tasks in relation to five themes:
- Value and Attuning: to what extent the respondent attunes to and values the disabled learner's mathematical contribution, and how, if at all, s/he attends to the particularities of their mathematical agency (Type I) or adapts to the restriction imposed on the communication (Type II)
- Classroom Management and Benefits: how the respondent manages the classroom after the contribution has been made (Type I) or comments on classroom management after engaging with Type II tasks
- Experience and Confidence: how experienced and confident the respondent claims to be in teaching students with the disability exemplified in the task (Type I and II)
- Institutional Possibilities and Constraints: what institutional possibilities and constraints the respondent identifies as crucial in the teaching of students in the task (Type I) and reflection about the strategies developed in Type II tasks
- Resignification: evidence of respondent's discursive shifts (views and intended practices) in the light of engaging with the tasks (Type I and II)

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