

DANSMA · OCTOBER 2026



Supporting belonging in mathematics

Relationships, care and participation
in mathematics education



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Our journey today

1. *Understanding*

What do belonging and well-being mean in mathematics, and why do they matter?

2. *Noticing*

How do relationships, care and classroom experiences shape students' participation?

3. *Responding*

What can we do to create emotionally safe, inclusive and mathematically challenging classrooms?

OVERVIEW

Along the way, I will invite you to reflect on your own experiences and talk with one another

TURN TO SOMEONE NEAR YOU

Think of a time when a relationship helped you learn something difficult.

*What did the other person do?
What changed you as a learner?*

Think quietly · 45 seconds
Share in pairs · 4 minutes

Listen for what the relationship made possible.



01

Belonging and participation

At høre til og deltage

A relationship is not background context.
It can change what becomes possible to learn.

KEY IDEA

Belonging in mathematics

The Foundation of Inclusion

Belonging is the feeling of being valued, accepted, and connected within the school community.

It's more than physical presence—it's about meaningful participation.



True inclusion goes beyond physical presence to fostering meaningful social and academic connections that empower every student to thrive.

KEY IDEA

Belonging matters for all learners

Research indicates that students with mathematics learning difficulties are at risk of anxiety and other internalising difficulties. Experiences of exclusion, stigma and shame may further undermine their sense of belonging, well-being and engagement in mathematics.

What kind of classroom helps every student feel that math is for them?



(Vieira et al., 2024; Wilson & Hunt, 2022; Quintero et al., 2022)

Barriers to Belonging for Students Experiencing Difficulties with Math

Focus on individual work, fast pace, tracking

These can reinforce exclusion and feelings of frustration, stress and inability to cope in mathematics

Over-reliance on adult aides

Constant adult support can inadvertently marginalise students, reducing vital peer-to-peer interactions and natural social development.

Fear of failure, low expectations

Negative feelings such as anxiety, exclusion, and low self-esteem create barriers that inhibit participation and engagement in learning.

Math anxiety and negative identity

A negative math identity can become deeply internalized.



PAUSE AND REFLECT

Think of a student that you know.

A student who participates less than you would hope in mathematics.

1. What do you actually see or hear?
2. What explanation do you find yourself giving?
3. What else might be happening?

Think quietly · 45 seconds
Share in pairs · 4 minutes



02

Noticing

At bemærke

How classroom practices shape
participation and belonging

Participation changed with the learning environment



ED

Positioned as dependent. Others frequently stepped in to help.

Developed solutions and contributed ideas that advanced the group's thinking.



NATE

Mostly passive in mathematics. Participated through jokes and social talk.

Engaged with meaningful contexts and represented his own reasoning.



CAM

Fast and accurate. Positioned as the expert and a “second teacher”.

Novel problems exposed his reliance on reproduced procedures.

Their participation changed when instruction valued reasoning over speed and accuracy.

Wilson, J., & Hunt, J. H. (2022). Marginalized within the margins: Supporting mathematics meaning making among students with learning disabilities. *Journal of Mathematical Behavior*, 67, 100982. <https://doi.org/10.1016/j.jmathb.2022.100982>

Inclusive Pedagogy

Difference is expected within the shared learning community.



Designing for **learner variability** from the start, incorporating *Universal Design for Learning* principles (CAST, 2018; Florian, 2019).

Creating **inclusive landscapes of investigation** where difference is expected and all students can learn together (Skovsmose, 2022). "*Inclusion might establish new possibilities for dialogical encounters and critical activities*"



Relational Foundations of Participation

Pedagogical encounters shape what students become able and willing to contribute.



Learning happens in **pedagogical encounters**, it is relational and deeply interpersonal (Hickey & Riddle, 2024; Ljungblad, 2021)

These encounters are shaped by **positionality**—who we are, how we see each other, and how we engage together in the learning process.

Meeting the psychological needs of **autonomy, competence, and relatedness**, as described by Self-Determination Theory (Ryan & Deci, 2020; Wang, 2017).



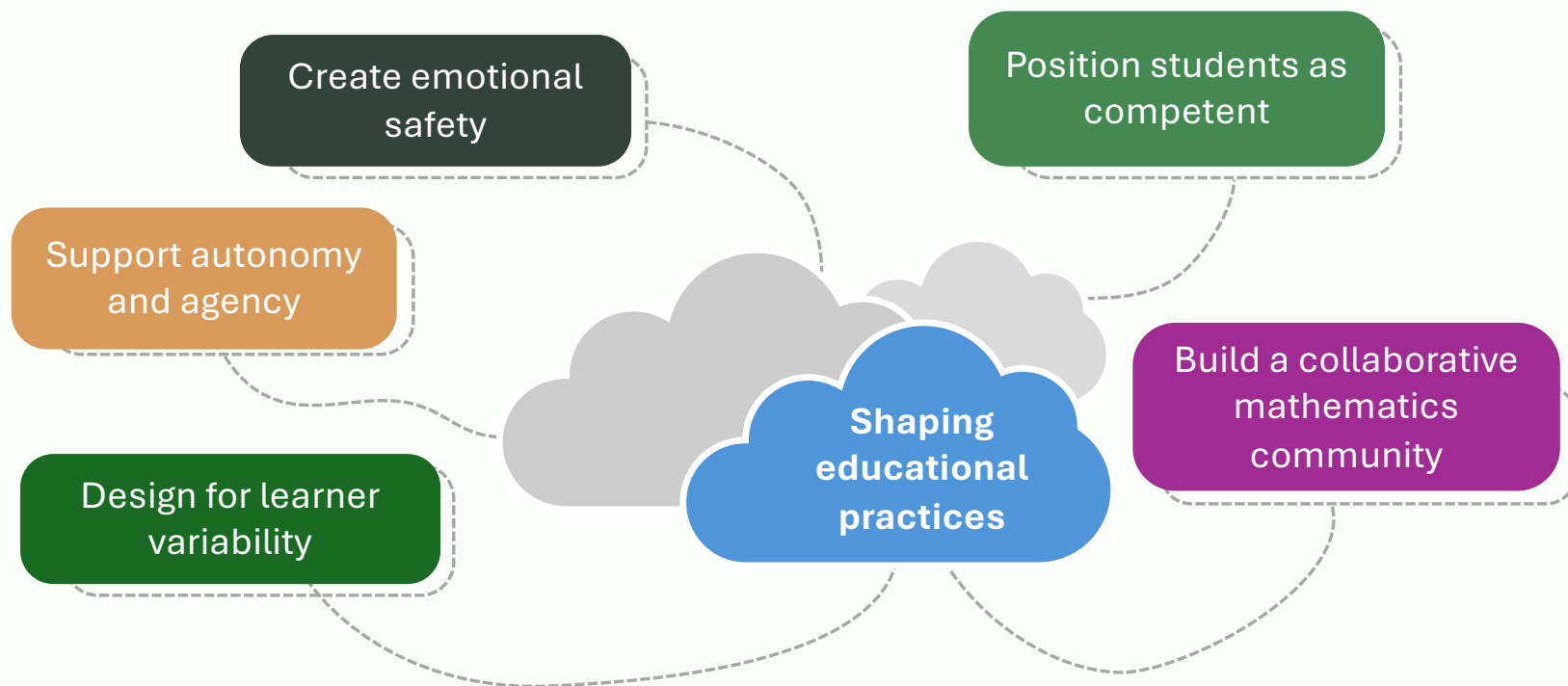
03

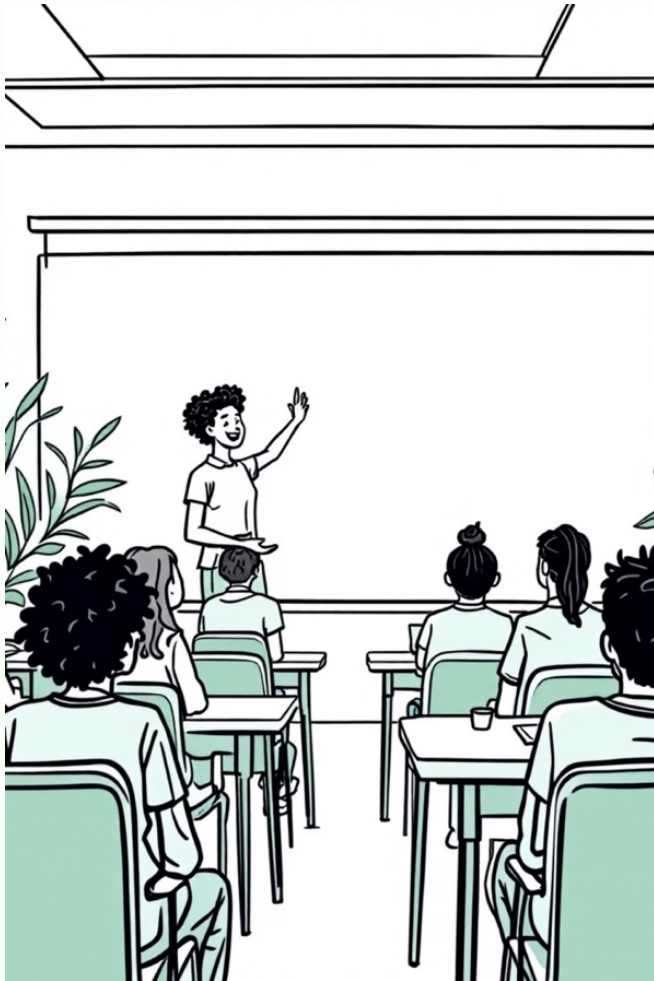
Responding

At respondere

Creating conditions for participation and belonging

Five ways to support participation and belonging





1 - Create Emotional Safety



Agency Through Participation

Involve students in goal setting, lesson choices, and self-assessment to increase autonomy and ownership of learning.



Safe Spaces for Expression

Create safe and brave spaces where students can express themselves authentically without fear of judgement or ridicule.



Mistakes as part of learning

Communicate that effort, strategy and reflection matter more than speed and correctness to create space for students to stay engaged – even when things feel hard.

2 – Position Students as Competent

Recognise and amplify mathematical strengths

Listen before helping

Ask students to show what they are thinking.

Name the competence you notice

Respond to a strategy, connection or representation rather than offering general praise.

Interrupt fixed roles

Do not allow “expert”, “helper” or “dependent” to become permanent student identities.

Incomplete thinking can still be mathematically valuable.



3 – Support Autonomy and Agency



- Offer meaningful choices about strategies, tools and representations
- Ask students to make and justify mathematical decisions
- Use questions that return the thinking to the student
- Adjust support as confidence and understanding grow

Agency grows when students see that their decisions shape the mathematics.

Help without taking over



01

NOTICE

“You have stayed with this even though it is difficult.”

02

ASK

“What have you tried—and where did the path change?”

03

RETURN AGENCY

“Which next step do you want to test?”

REFLECTION MOMENT

Think of a student who receives a great deal of support

When does support strengthen the student's agency?
When might it unintentionally reduce it?

Think for 45 seconds
Share in pairs 4 minutes



4 – Build a Collaborative Mathematics community



Build Authentic Relationships

- Shared mathematical goals
- Respond to others' reasoning
- Authority across the group
- Every student contributes

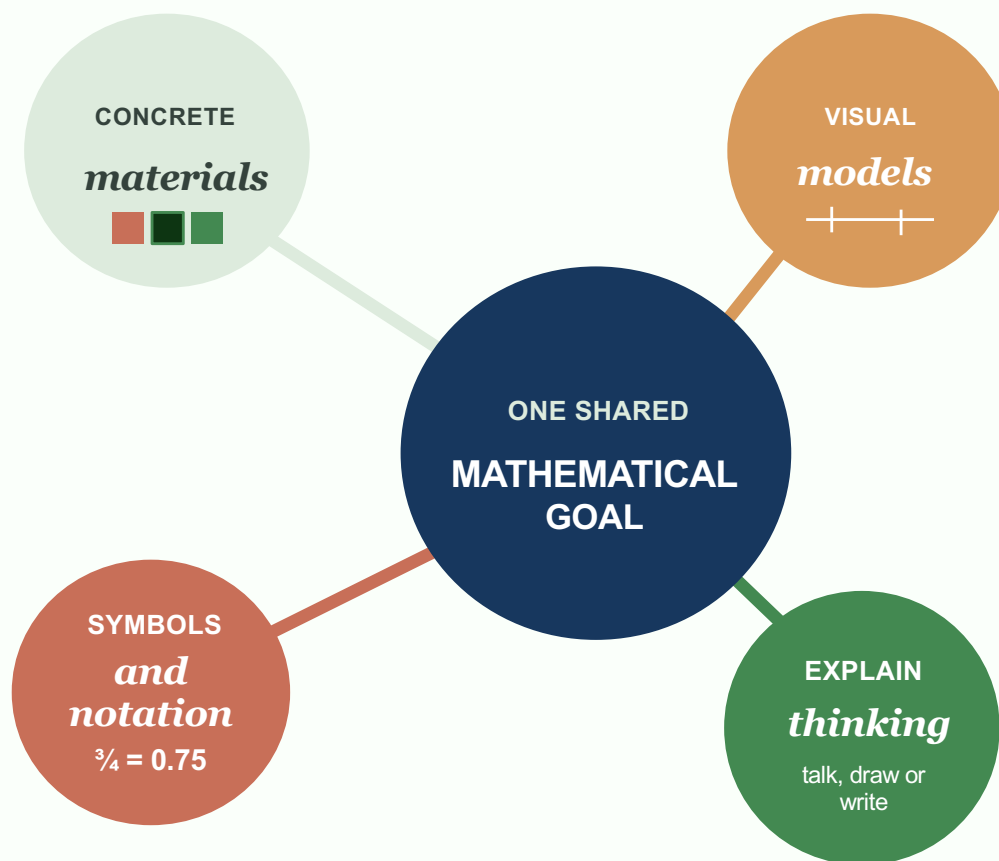
Collaboration grows when students need one another's ideas

5 - Design for learner variability

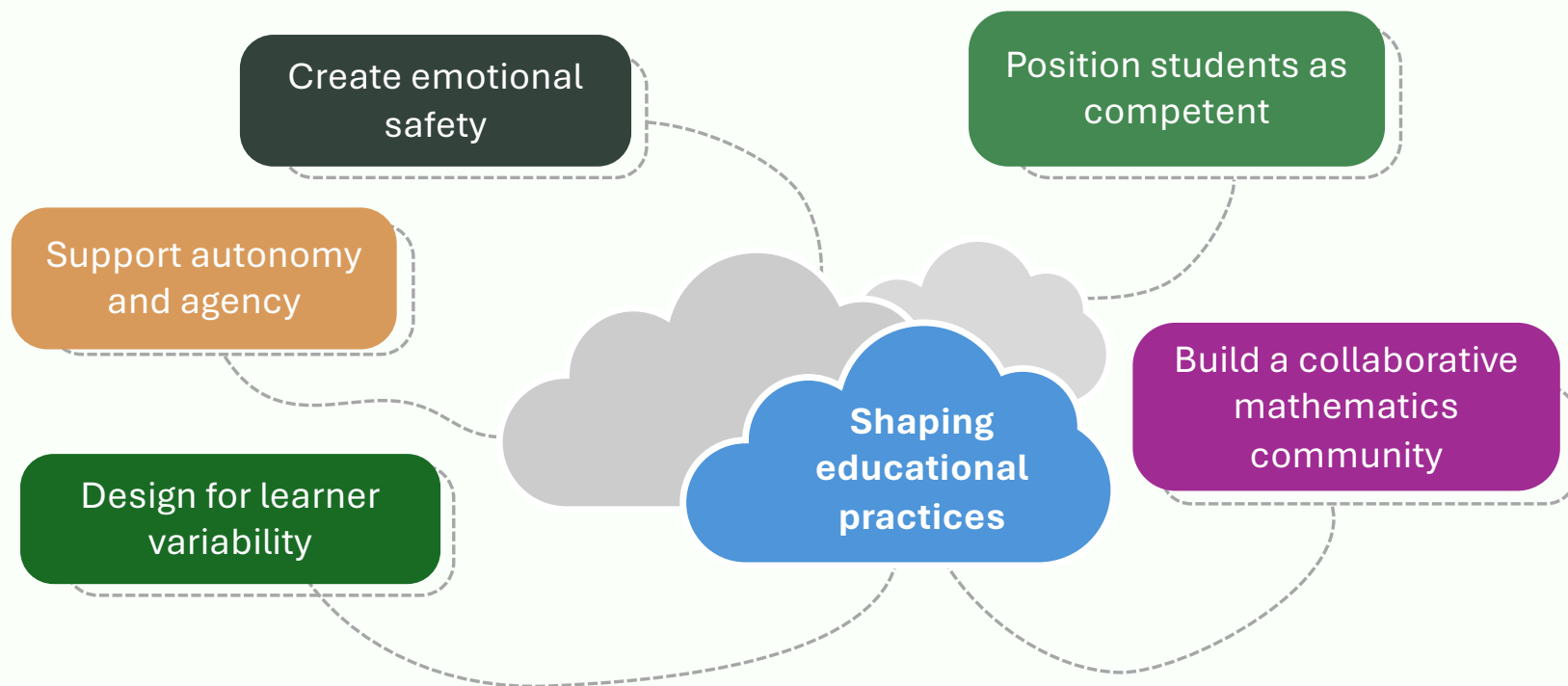
Multiple routes into a shared mathematical goal

- 01 Keep the mathematical goal clear and shared
- 02 Anticipate barriers before the lesson begins
- 03 Offer purposeful choices in representation, tools and response
- 04 Provide scaffolds while maintaining the mathematical challenge

Different routes can lead towards the same mathematical goal.



Five ways to support participation and belonging



Returning to where I began

*What might have changed
my story?*

- A way into mathematics again
- Time to make sense of ideas
- A classroom where difficulty did not threaten belonging



LEAVE WITH ONE PRACTICE

*One student.
One interaction.
One action to try.*

What will you do differently on Monday?

Thank you · Takk · Tak

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