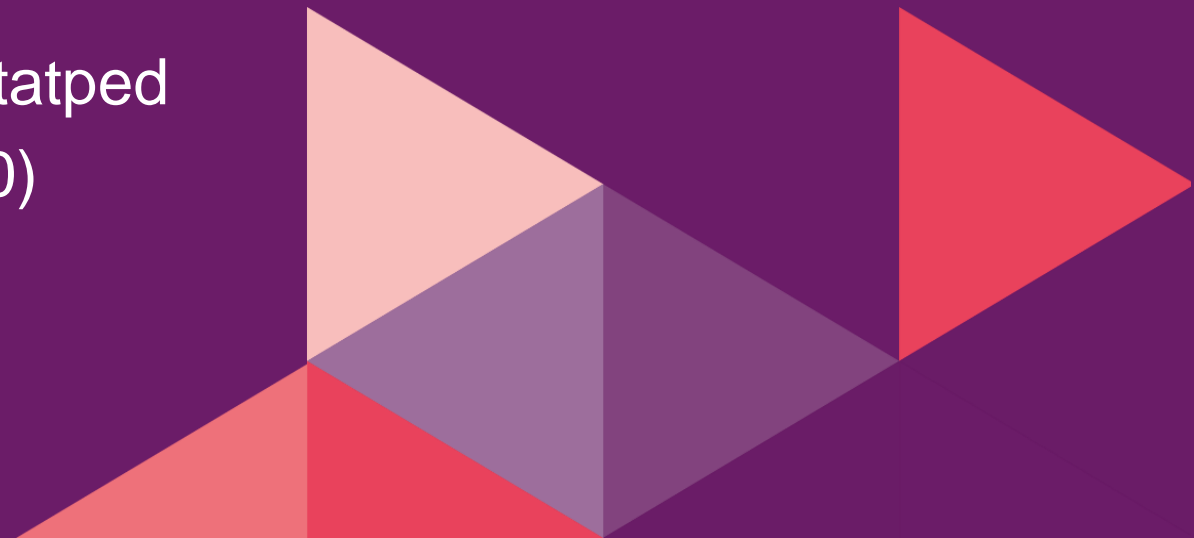


“How to understand and investigate pupils’ challenges in mathematics and identify suitable instruction measures”

Two projects run in cooperation between Statped and Vestfold county/municipalities (2019-20)

Irina Jensen and Jeanette Lindhart Bauer, Statped



Background information

- ▶ 2018: Council of Educational and Psychological Counselling Services (EPCS) in Vestfold County wanted to improve their competence on mathematical learning difficulties
- ▶ Two parallel projects:



Primary / secondary school level



High school level



What did we hope to accomplish?

- ▶ Broader understanding of mathematical learning difficulties
- ▶ Increased competence in investigating mathematical learning difficulties, considering both environmental and individual factors
- ▶ Improved knowledge of effective measures for mathematical instruction
- ▶ Establish systems for sharing and expanding new competence



Project design: “Case-based” competence development

- ▶ Theoretical instruction, case studies and practical work
 - Make theoretical content more accessible (Stanley, 2021 & Aastrup, 2018)
 - Increase likelihood that new knowledge becomes active practice
- ▶ Case groups:
 - Educational psychologist, mathematics teacher and special education teacher
 - Group case: Local pupil with MLD



Contents and organisation

- ▶ Four whole-day gatherings
 - Theoretical instruction and group sessions
- ▶ Between gatherings:
 - Try out new knowledge on local case
 - Send anonymised reports to Statped
 - Discuss progress in group sessions



Gathering 1: Understanding MLD

- ▶ Mathematics as a specific /developmental learning disorder
- ▶ Other influencing factors:
 - Inadequate tuition
 - Mathematical anxiety
 - Other specific/general learning disabilities
 - Other challenges

DSM 5 (2013), ICD-11 (2018)



Gathering 2: Investigating MLD

- ▶ Environmental and individual factors (Deruaz et al. 2020)
 - Wide approach important
- ▶ Lack of standardised tests
 - How to compensate for this deficiency?
- ▶ Importance of consulting the pupils themselves
 - Feelings and experiences
 - Mathematical reasoning



Gathering 3: Assessment and intervention

Focus: Analyse information and plan interventions

- ▶ Explorative and inclusive education
- ▶ Response to intervention
- ▶ Involve pupil both in planning and evaluation
- ▶ Relation between ordinary and special education

(Fosse et al., 2020)



Gathering 4: Planning and evaluation

- ▶ Results from case group interventions
- ▶ Theory on planning and evaluation
- ▶ Plans for maintaining and developing competence



Feedback – primary and secondary school project

«Good program. The only thing I want more of, is practical examples, like the ones you shared in the 4th gathering.»

«Group work was interesting and meaningful. Courses like this can't get practical enough.»

«Like our students, I miss the practical aspect. I would like more «best practice» examples of measures or plans recommended

Feedback – high school project

«Very useful to see concrete examples on how to plan instruction»

«Theory on MLD was very useful, as was the overview of tests and other material»

«Our case student exchanged both timetable and teacher»

«We did not cooperate with our regular EP counselors in this project»

Evaluation – Statped's aims revisited

- ▶ Broader understanding of mathematical learning difficulties 😊
- ▶ Develop competence in investigating mathematical learning difficulties 😊
- ▶ Improved knowledge of effective measures for mathematical instruction 😐
- ▶ Establish systems for sharing and expanding competence 😞



Adjustments for future intervention programmes

- ▶ Preparation
 - Involve schools more actively in planning
 - Both schools and EPCS should recruit participants before selecting case pupils
- ▶ Gatherings: Still more active involvement of participants
 - Share practice examples in lectures
- ▶ Start planning local networks at an earlier stage
 - Establish local teams who are responsible



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