

# TEACHERS' AND STUDENTS' NEEDS RELATED TO IMPLEMENTATION OF FORMATIVE PEER ASSESSMENT IN IBSE IN CZECH SCHOOLS

(first findings of ASSIST-ME Project)

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# Implementation of formative assessment



## ▪ Many difficulties

- A lack of appropriate solutions for teachers - observed in many countries (Bernholt et al., 2004; Brown, 2004) *technical*
- Czech Republic - summative assessment culture (public/parents expectations); scarce/fragmented experience and literature (c.f. Zlabkova, Rokos, 2013; Laufková, Novotná, 2014). *contextual*
- Teachers usually do not provide formative feedback, but sometimes is the term „formative“ misinterpreted (William, 2004; Newton, 2007; Stary, 2007). *conceptual*



# Implementation of formative assessment



- **ASSIST-ME project** (*Assess Inquiry in Science, Technology and Mathematics Education*)
  - CZ: **Peer-assessment** in IBE primary integrated science and mathematics and lower secondary biology.
- RQ: What are the main challenges related to the uptake of formative assessment in the daily practices in STEM education?

## Actor's perspective

- What are **the needs that teachers and students have** in relation to broader implementation of formative assessment?



# Method



- Participants and the Task
  - **Integrated Science**
    - 2 teachers, 3rd grade classes (48 students)
  
  - **Biology**
    - 2 teachers, 7th grade classes (60 students)
  
  - **Primary Mathematics**
    - 2 teachers, 5th grade classes (45 students)

- Problem: How many lentil grains are there are in a 500 g packaging?

**Kolik zrněk je v půl kg čočky?**

Jména žáků, kteří úlohu řešili:

Odhad počtu zrněk:

Jak jsme postupovali?  $\frac{100}{100} = 1000$  zrněk  $\frac{200}{200} = 2000$  zrněk  
 $\frac{300}{300} = 3000$  zrněk  $\frac{400}{400} = 4000$  zrněk  $\frac{500}{500} = 5000$  zrněk  
 $\frac{600}{600} = 6000$  zrněk  $\frac{7000}{7000}$  zrněk. Jako první jsme si dali do hrníčku lodiček zrněk aby nám stálo na čísla 100. Pak jsme to nasyпали do obléžáčky takže jsme to udělali 6x myslíme si že v jednom hrníčku je půl 1000 zrněk pak jsme si to konečně vyzkoušeli přičítali 1000 zrněk a výšel nám výsledek 7000 zrněk.

Výsledek:



**Oprava**

Chcete si opravit své původní řešení?  Ne, myslíme si že výsledek nemáme nějak špatnou.

Pomohla vám rada kamarádů?

V čem?



- Data collection
  - data about (methods/tools stimulating) peer-assessment (not presented here)
  
  - data about teachers' and students' needs
    - interview with students
    - interview with teachers
  
  - 2 primary math – teachers' subjective theory of FA (Struktur Lege Technik; Scheele, Groeben, 1988)



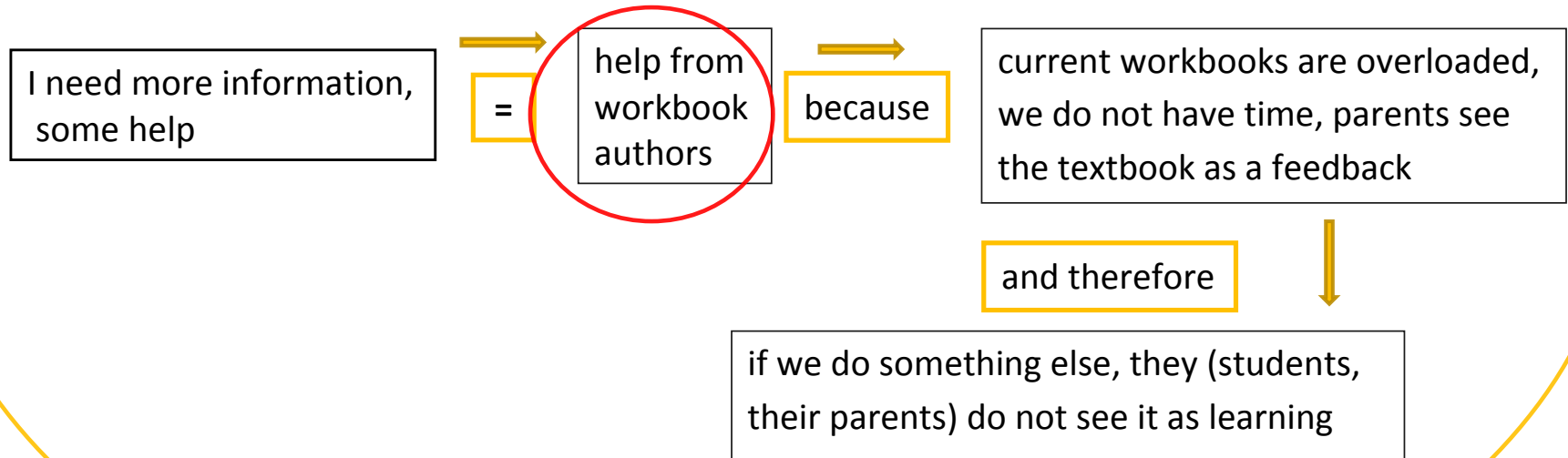
- Data analyses
  - open coding and hierarchical sorting  
(transcripts of interviews; re-coding and inter-rater in process)
  - construction of representation of teacher's subjective theory of FA in IBE







## Changes needed for FA implementation?



# Needs according to subjective theories - example

## before

„help from workbook authors“

- more time
- assessment tools

## after implementation

„to see someone doing it properly“

- too many hindrances
- it will take a lot of time to regularly implement
- not enough experience –  
I can't imagine
- structure/scaffold where to implement

# Results - summary



## Teachers' categories:

- lack of determination - changes current status is convenient (need to cope with parents and students demands for marks)
- lack of time
- lack of scaffolding for students (structured assessment tools)
- lack of scaffolding for teacher
- preparatory work with students (develop peer-assessment skills)
- team work (researchers, colleagues to share)



# Results - summary



## Students' categories:

- peer language (in the feedback is an advantage)
- discomfort (elevated social tension when peer feedback is not provided properly)
- uncertainty about levels of assessed criteria (possibility to see more works and compare them before providing feedback)
- scaffolding when they didn't know the right solution (and how to assess without knowing it)
- information correctness and richness (feedback from teacher preferred as more reliable)



# Conclusions



## WHAT do the students need?

- to understand the role of peer assessment (in formative climate of learning)
- to reveal the advantages and learn how to cope with disadvantages of FPA (peer vs. teacher feedback etc.)
- time to gain skills for providing/receiving peer assessment – regular use of FPA and adequate scaffolding (e.g. progress tables)



# Conclusions



## What do the teachers need?

- time to develop a deeper understanding of the role of formative peer assessment and to receive task based instructions
- preparation of proper materials (for school team, parents, students)
- support for its implementation in practice
  - to create appropriate materials and tools to support implementation is necessary but not enough, video examples are helpful
  - but the most important is possibility to share and work in a team

*technical, contextual and conceptual support*



Thank you for your attention.

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