

# HOW PRIMARY SCHOOL TEACHERS SUCCEED IN DESIGNING LESSONS TO TEACH STUDENTS 21<sup>ST</sup> CENTURY SKILLS

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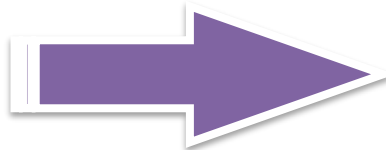
# BACKGROUND



# Deep learning & 21<sup>st</sup> century skills

- Latvia: changes in curriculum for developing 21<sup>st</sup> century skills
- 21<sup>st</sup> century skills can be acquired through deep learning approach (Fullan & Langworthy, 2014)

Accumulate knowledge  
(what we know)



Gather knowledge  
(how we know)



# Problem: Gap between policy & practice

- Lesson observations in Latvia reveal a gap between policy and actual teaching approaches
- (France, Namsone & Čakāne, 2015; Volkinsteine & Namsone, 2016)
- There is a need for additional approaches to help teachers implement teaching of 21<sup>st</sup> century skills

education policy  
regulations

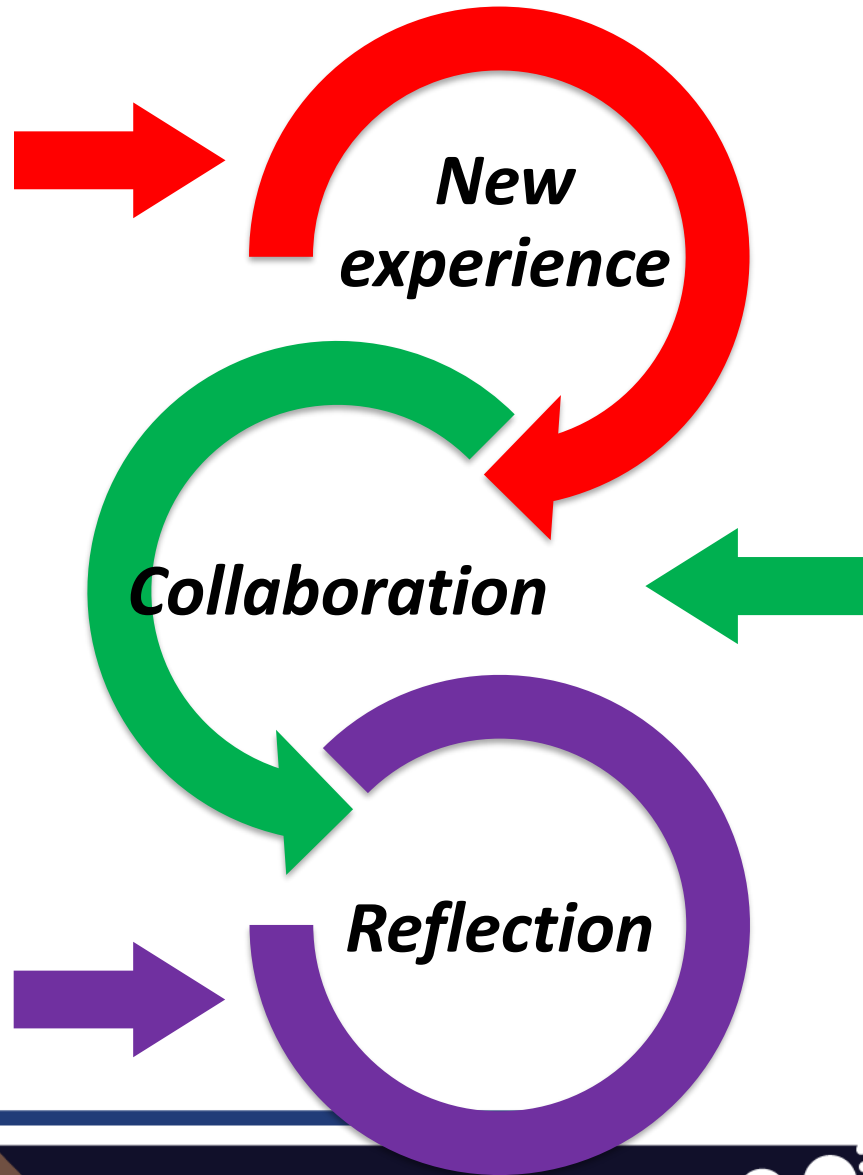


actual teaching  
approaches in schools

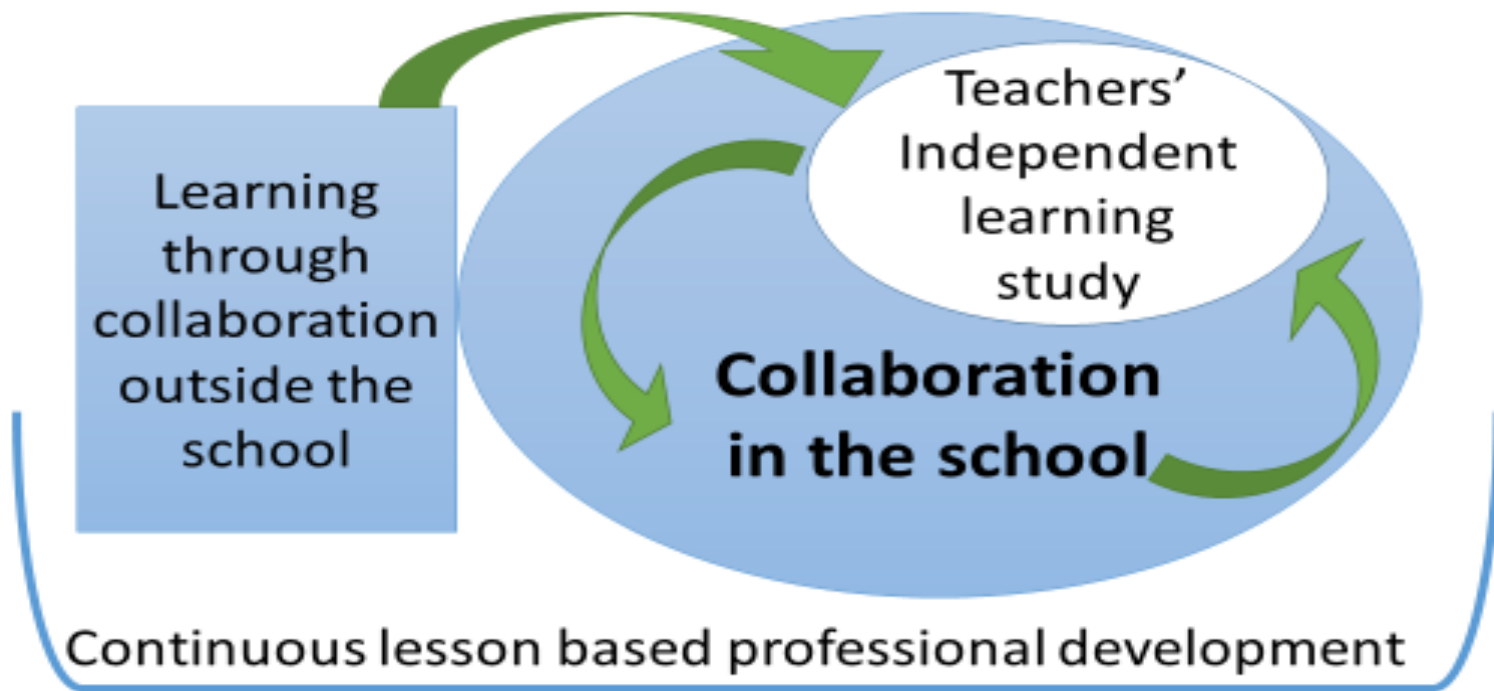


# Learning philosophy

- Teaching:
- effectiveness
  - ICT
  - SI ...



# Proposed model



# The research questions

- What is the cognitive depth of a teacher developed lesson for teaching 21<sup>st</sup> century skills?
- Are there differences between school teams?
- What do teachers think about their capability of teaching these skills to their students?
- How do expert-coaches evaluate teacher performance teaching these skills in the lesson?





# METHOD



- Research included teams from 13 schools.
- Each team - two primary school teachers and a school leadership representative.
- Eight expert-coaches from the University of Latvia
- Expert-coaches experience in lesson analyses.



- 55 primary teachers developed lesson plans.
- 26 lessons observed during the workshop used.
- Two expert-coaches each lesson.
- 0-4 level rubrics for every criteria.
- Individual evaluations based on classroom observations and transcripts.
- The level of the cognitive demand rubric - according to SOLO taxonomy.



# A rubric for criteria «metacognitive activity»

L	Description of the level
0	Lack of necessary preconditions for learning awareness
1	Learning goals are not explained to students and related performance criteria or reflection is absent
2	Learning activity ends with reflection; knowledge and skills are clearly defined and their usage is discussed
3	and students must think about the way they learn, reason and remember
4	and students must evaluate different strategies, their efficiency (the way they learn, reason and remember) and choose the most appropriate one



# RESULTS



# Cognitive demand:

- 0 level - 2% lessons
- 1<sup>st</sup> level - 29% lessons
- 2<sup>nd</sup> level - 31% lessons
- 3<sup>rd</sup> level - 38% lessons



# Metacognitive activity:

- 1<sup>st</sup> level - 67% lessons
- 2<sup>nd</sup> level - 19% lessons
- 3<sup>rd</sup> level - 12% lessons
- 4<sup>th</sup> level - 2% lessons



- 2 school teams reached 100%
- 2 teams around 70% on cognitive demand level 3
- 1 school team stayed on level 1





# Metacognitive activity:

- 1 school team reached level 4
- 4 teams reached level 3
- 5 teams stayed on 1 level



# Teachers responds (% of the respondents)

Criteria	Statement Questionnaire	0	1	2	3
Cognitive demand	Improve student HOCS	0	35	60	5
Metacognitive activity	Teach students think about thinking and learning	0	40	55	5



# **DISCUSSION AND CONCLUSIONS**



# Main findings

- Teachers acquired experience in developing essential 21<sup>st</sup> century skills in students
- Gradual improvement of skills: giving feedback to students, communicating learning goals and developing student meta-cognitive skills
- Depth of cognitive activity and complexity in 38% of the developed samples reaches level 3 (on the scale 0-4)



- The gap between the findings of the survey and experts evaluations.
- Teachers tend to focus on the subject content; rarerly fail to mention the skills among lesson outcomes.
- Skills are not taught on a conscious level.



# For future research

- The significant differences between schools cannot be explained only by differences in teacher professional expertise; school leadership has an impact on performance of the school team.
- Expressions of this impact will be subject to future research.



Thank you for your attention!



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