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Average students' attentiveness and class size

Argos observation system in action



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Three types of questions in class size research

Predictive

- e.g. *what is the effect of class size reduction?*

Descriptive

- e.g. *do we observe small classes' advantage?*

Explanatory

- e.g. *why does class size reduction (not) work?*

(Goldstein & Blatchford, 1998)



Selected effects of class size reduction

Based on Project STAR (Finn & Achilles, 1999), benefits of small classes include:

- Improved teaching conditions
- Improved student performance
- Especially for those with background known to be disadvantageous (i.e. minority, inner-city) *
- Higher adoption of beneficial learning behaviours

* But this differential effect is questionable (see Nye, Hedges, Konstantopoulos, 2000)



Why should small class be beneficial?

➤ Teacher behaviour:

- Different methods (more effective in small classes)
- More teaching time
- Less time on keeping the discipline and non-academic behaviours

➤ Student behaviour:

- **Students stay more on task (higher attentiveness)***
- Less opportunities to be distracted

* (Blatchford, 2003, Babcock & Betts, 2009)



Longitudinal School Effectiveness Study

- Conducted by **Educational Research Institute**
- **Aim:** identification of the key school factors determining the academic achievement of students in Poland
- **Representational sample** of 178 primary schools, 300 classes, ca. 6000 students
- Study began in **2010** (3rd grade) and ends in **2014** (6th grade)
- **Multiple measurements** of individual, family and school characteristics
- The need for reliable description of teacher practices and classroom environment – **systematic observation**



Argos observation system



- Computer application designed to enhance the observation of a classroom
- Created specifically for LSES, but...
- Very flexible, easy to adapt

Three observation modes:

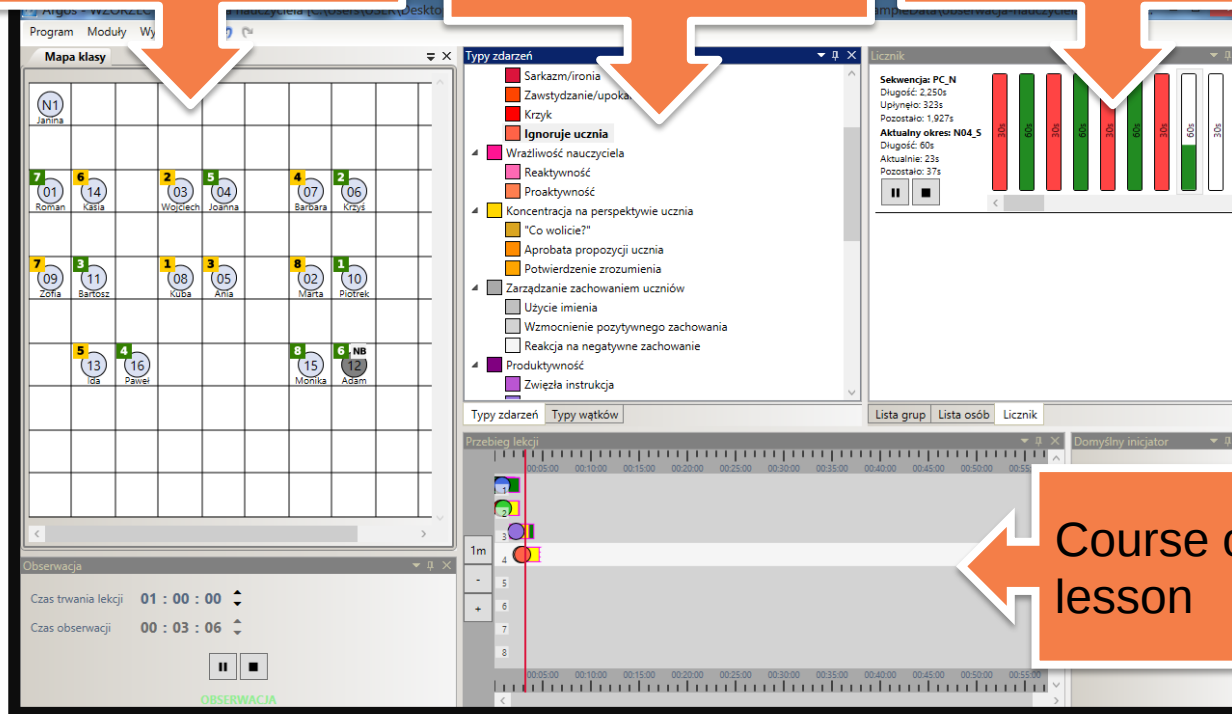
- observation focused on a teacher
- **observation focused on a student**
- didactic (instructional) observation

Argos observation system

Classroom map

Events/Threads
List

Counter

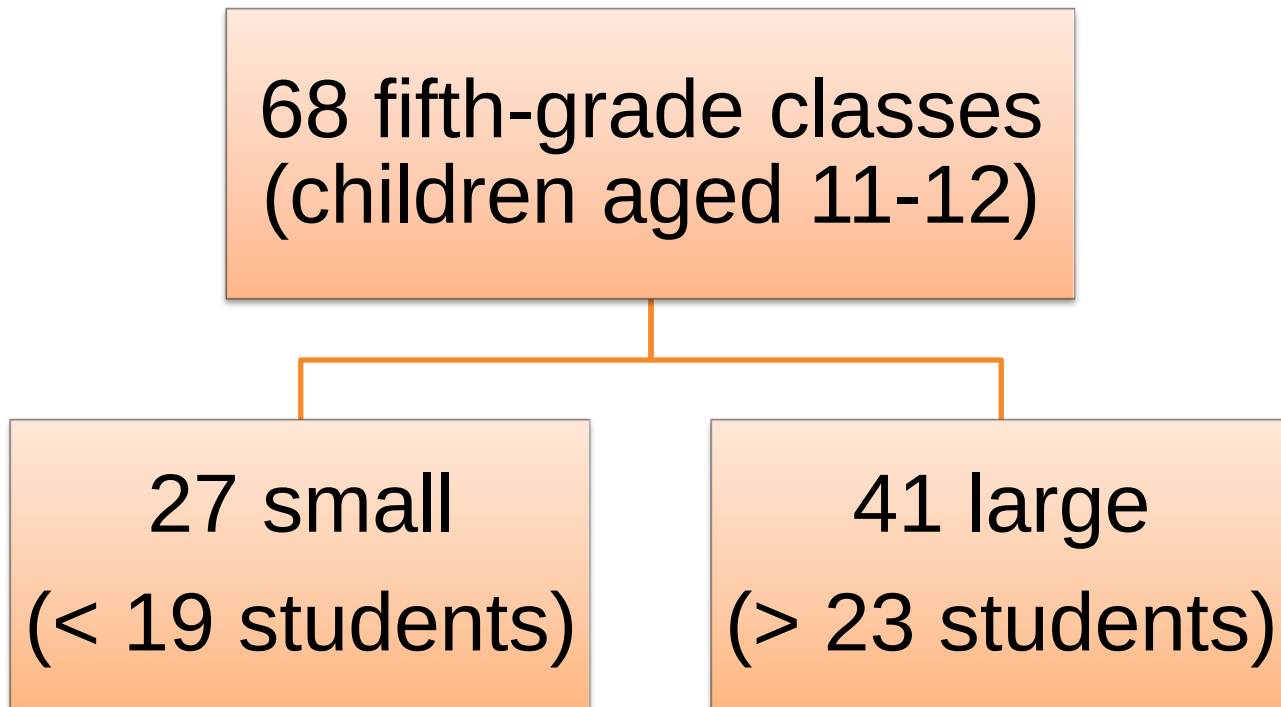


Course of the
lesson

Argos GUI consisting of Classroom map and multiple Tool Windows in teacher-focused observation

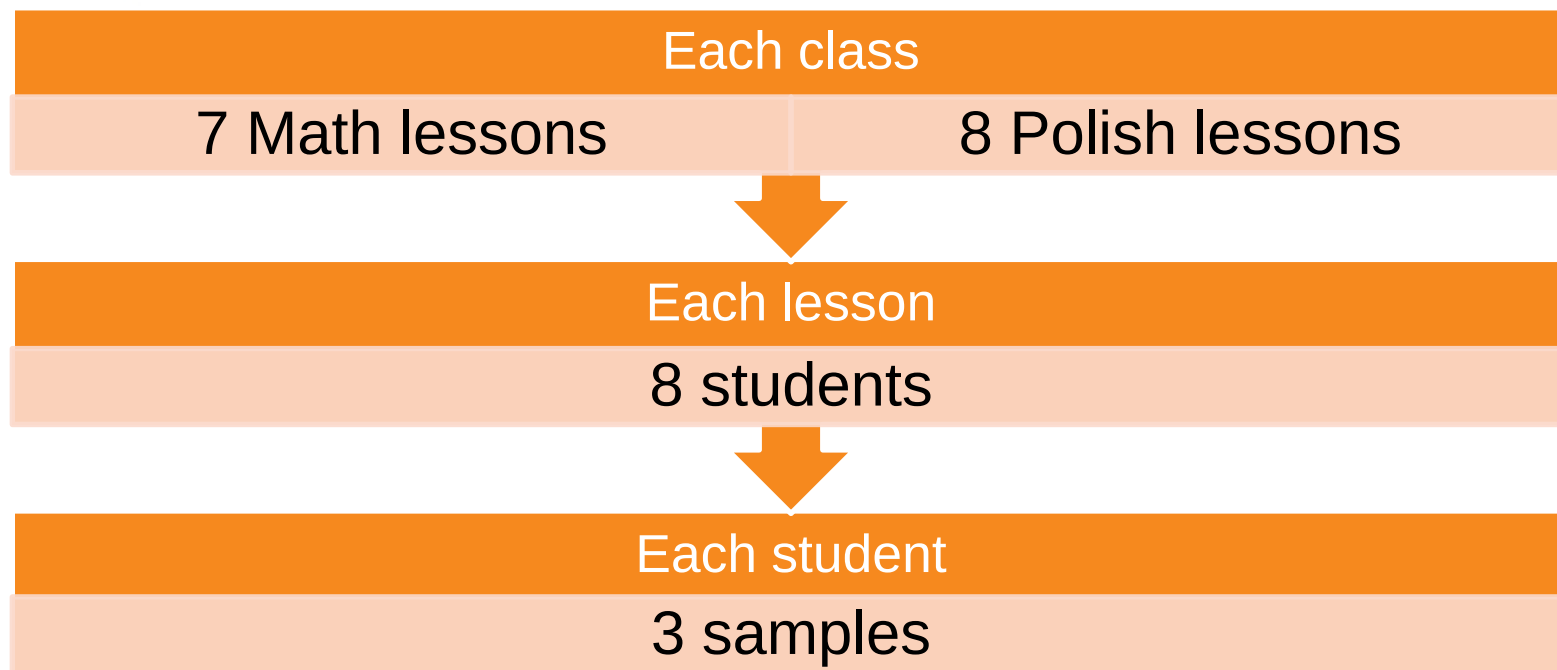


Argos Data





Argos Data - continued



On average 22-25 time samples per lesson



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Analyzed behaviors

student works on a task

student doesn't work on
a task

(student has no task)

Task - any stage of academically-oriented class work



Construction of the attentiveness index

Occurrences counted within the lesson



Divided by the number of the samples in the lesson



Averaged within the class



Result: average chance of observing a specified behavior within the class



Results

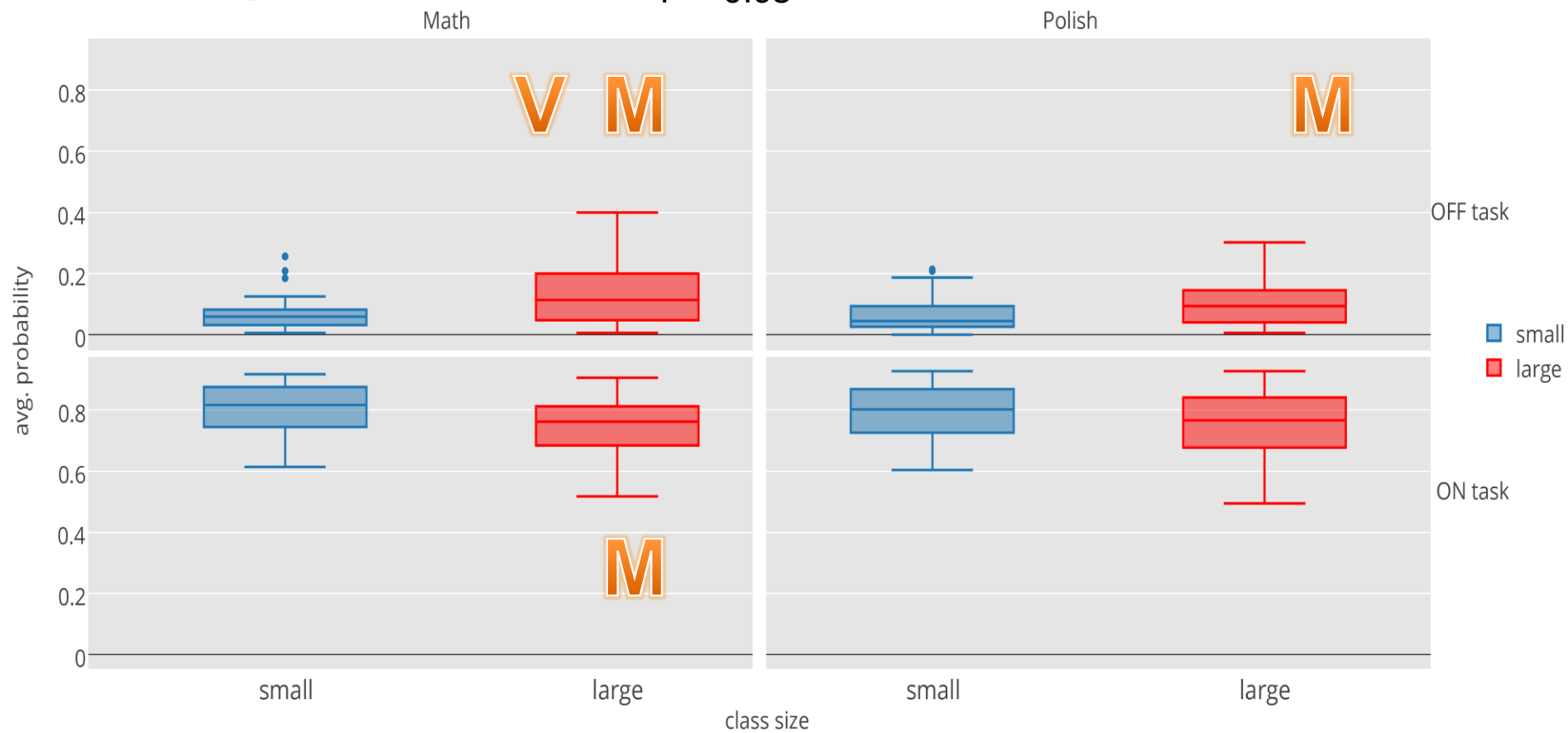
M

Test of no shift

V

Test of equal variances

$P < 0.05$



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Discussion

- Some support for the hypothesis that students in small classes work more
- Not significant result for Polish lessons – difficulty in behaviours' operationalization?
- Need for analysis of teacher behaviour
- Need for analysis of the relationship between class size and achievement
- (Limitation) Small sample of classes prevents more sophisticated analyses – exploratory study



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Thank you for your attention!

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