Consecutive cycles of “whole class” Lesson Study
A format for development of shared teacher knowledge in preservice teacher education
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Consecutive cycles of “whole class” Lesson Study - A format for development of shared teacher knowledge in preservice teacher education

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Abstract

An analysis of three lesson study cycles of the same research lesson carried out by 16 pre-service lower secondary teachers. The process of lesson planning and revision is displayed and it is shown how the pre-service teachers develop knowledge about critical details of the lesson, its contents and pupils’ learning.

Research Questions

How is knowledge gained from each research lesson and post-lesson reflection incorporated in subsequent re-teaching?

What are the benefits and drawbacks of large group sizes in pre-service teacher lesson study?

Context, method and theory

In 2015, a group of 16 students attending a Danish teacher education in which Lesson Study in small groups is common, were asked to plan one research lesson collectively. The development over three cycles of a lesson plan (for a grade 8, 2X45minutes) were subjected to document analyses. The lessons and reflections were observed by the author (note-taking and video recording). All material was indexed using Nvivo10 and subjected to praxeological analysis in the sense of the anthropological theory of the didactic (Chevallard & Seneys, 2014).

Knowledge development

Initial task type (T) put to the pupils, anticipated techniques (τ)

T1: Who in the class is most likely to be selected to pick up milk.
T2: Investigate who of three pupils are most likely to be the one pick up milk, if they use two coins
T3: Make a combinatorial argument to answer T2
T1: Peer/class discussion based on prior experiences
T2: Perform physical simulation, take count.
T3: Perform large number of simulation using padlet (mobile phone)
T4: Draw a schematic of sample space

Revised task type (T) put to the pupils, anticipated techniques (τ)

T1: Who in the class is most likely to be selected to pick up milk.
T2: Investigate who of three pupils are most likely to be the one pick up milk, if they use two coins
T3: Make a combinatorial arguments to answer T2
T1: Peer/class discussion based on prior experiences
T2: Perform physical simulation, take count.
T3: Perform large number of simulation using ICT (Excel spreadsheet)
T4: Draw a schematic of sample space

Reasons (θ) for tasks and techniques.

θ1: Should become of subjective beliefs about probability
θ2: Pupils become aware of statistic probability
θ3: Pupils aware that statistic probability variation decreases
θ4: Pupils become aware of combinatorial probability.

Associated didactic techniques (τ)

τ1: Use of familiar context engages the pupils
τ2: Watch video instruction about how to do simulation.
τ3: Provide table in which to record results of physical simulation
τ4: Step by step video and written instruction about how to do simulation.
τ5: Use of crooked dice generates a true need for statistic probability.

Concluding Remarks

Knowledge that the lesson does not work initially are first sought remedied with minor didactic changes, before major changes are attempted.

A “knowledgeable other” is crucial to overcome reluctance to make major changes.

The semi-autonomous process of lesson study need another scaffolding to engage a whole class and thus produce didactic knowledge common to all pre-service teacher students.

References


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