

Group assignments in an online mathematics course

**Laura Fainsilber, Linnea Hietala
Chalmers, Göteborgs universitet**

Group assignments in an online course for the Foundation Year (Tekniskt Basår)

Goals:

- *social contact*
- *bridging the gap between secondary school and university math*
- *developing forms for group work*
- *mathematical communication*
- *learning to handle open-ended questions*
- *using GeoGebra to explore math*
- *understanding course content*

The group assignments

- format: 1/week, extending an exercise session
- random groups, new each week
- small "reward": bonus points (max 3,5p; 20p of 46 to pass the course)
- role for each student
- peer feedback
- no teacher grading or feedback (read for overall impression)
- First example (introweek): discuss definitions of division of fractions

Example assignments

- one ordinary: week 5: [simplifying expressions](#)
- last week: [grading an exam problem](#)





What we learned

our data:

- observing group discussions
 - reading student assignments
 - reading students' peer feedback
 - student evaluation
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- It works: students discuss math
 - bonus points matter (carrot)
 - we can help group dynamics (but not force productive attitude)
 - be there (talk with each group) for stimulus and to answer questions
 - detailed grading is not necessary
 - short follow up (at next exercise session or publish solutions)

Inspiration from research:

- socio-mathematical norms (Yackel & Cobb)
- communication in mathematics (socio-cultural approach)
- student roles for group work (POGIL)
- type of questions, exploratory (Schoenfeld)
- some content (e.g. Liping MA on fractions)

<p>Questioner Keep track of questions that the group has as you work on the math problem.</p> <ul style="list-style-type: none">• <i>What was your question?</i>• <i>What do you mean by that?</i> 	<p>Director Make sure everyone is participating in the math work.</p> <ul style="list-style-type: none">• <i>What do you think?</i>• <i>What do you mean by that?</i> 
<p>Illustrator Draw diagrams, tables, or other illustrations that show what the group is doing with the problem.</p> <ul style="list-style-type: none">• <i>Is this what you were thinking?</i>• <i>What do you mean by that?</i> 	<p>Connector Make connections between what people in the group think and say.</p> <ul style="list-style-type: none">• <i>How does this idea connect to that idea?</i>• <i>What do you mean by that?</i> 

Do try this at home!

- Can also work on-campus
- Be explicit about the process (presentation round, roles, peer review...)
- Formulate questions with care
 - very clear (but open-ended, process-oriented)
 - tightly connected to other coursework

Questions? Comments?