Teleprism Research Briefing

My ideal maths teacher and lesson: Students' stories

The Project

The aim of the "Teaching and Learning Practices in Secondary Mathematics" (Teleprism) project, funded by the Economic and Social Research Council (ESRC grant RES-061-25-0538) and based at The University of Manchester, is to map secondary students' learning outcomes, attitudes and choices regarding mathematics, together with the teaching they are exposed to.
The research team worked during the academic years 2011-2012 and 2012-2013 with 40 secondary schools in England to collect longitudinal data from students and their mathematics teachers, through short on-line (or paper) questionnaires. Case studies were also taking place at the same time involving lesson observations and interviews with teachers and students. For this briefing we report on some results from the students' surveys. For this briefing we report on some of the qualitative data from students interviews.

The Interview Data: The sample of students is drawn from two secondary schools, from Years 7 to 11. Both schools served predominately White British populations but differ in a number of other background factors (e.g. disadvantage index, school ethos, etc). A total of 105 students from both schools were interviewed, most of them twice with at least six months interval between the 1st and 2nd interview. The semi-structured interviews focused on mathematical experiences and dispositions, including favourite & least favourite subjects, attitudes to mathematics, pedagogic practices, preferences in relation to these practices and ideal lessons.

The ideal Maths teacher

Students overall perceived an ideal maths teacher to be 'nice', empathetic, understanding and at the same time using appropriate pedagogical methods. Mainly, the ideal teacher is somebody who 'explains it well'. Another factor related to a good teacher was the amount and frequency of feedback (for the most motivated students):

'*Our books don't really get marked often, they get marked once a month*' (Y9, Male)
'someone that pushes you and keeps you going and encourages you' (Y11, Female)

Some students appreciated a good relationship with their teachers. Teachers who were approachable, but also able to control the class and create an atmosphere where students can work undistracted:

He's really smart but he couldn't like control the class because I was in a very giddy class… (Y11, Female)

The ideal Maths lesson

When we asked students what they think an ideal math lesson is for them, we got different responses, depending on their ability level, the individual students' learning styles, their overall maths disposition as well as year group and gender. Interestingly, for some students this also depends on the purpose of the lesson: if this relates to upcoming exams, the ideal lesson should be around processes and procedures, whilst if the purpose is to understand and learn maths, this should 'relate it to real life scenarios' (Female, Year 11). Students overall enjoy interactive lessons and variety.

Real life connections & 'Practical'

*"we had to build a bridge, (which one could hold the most weight), so me and student X, we won it last year, but we didn't win it this year." (*Male, Year 9)
*"… it would be something I understand something that's quite practical" (*Male, Year 10)
"Group work obviously and…it would be something that's useful in life" (Male, Year 11)

Games, fun and use of technology (mainly reported by boys).

"A bit more maths games" (Male, Year 7)

"They should make Maths more fun because people would want to like come and enjoy it a bit more and be more involved in it, at the moment people are a bit bored […] like more computers and other like techniques and learning not just writing all the time" (Female, Year 8)

"Yes, like on computers. …. Go on maths games, it is better like that" (M*ale, Year 8)*

"Probably work on iPads instead of writing (Males, Year 11)

"Probably a mixture of computer and written work. Maybe some like new and different ways of learning like I said like funny videos but things that are related to teenagers as well" (Female, Year 11)

Opportunities to be more active

"I'd probably do it like more games things, like… a bit fun like get outside, we've done that once in the eight weeks but we were doing maths out there, we were like making circles and rectangles and then we had like one in the middle of them and then it's like how many spaces to get to the other people so…probably go outside a bit more, that would be good" (M*ale, Year 11).*

"when we do a question it is usually Sir is the one who answers it, but he should like ask the students to come on the board and write it out" (Y10, Male)

"Like I will say, you can go outside and we can learn the angle of the sun, they are more creative and you are learning more by knowing. Like when you are sat in there you think I am going to have to learn now, but when you are outside you think I am not going to learn anything, but you actually do learn more" (Female, Year 11)

"Teachers just sit there and they write on that and then you've got to copy, but it'd be better if like other people could come up and attempt stuff on it…" (Male, Year 11).

Working in groups, pairs, or individually?

Most students reported a preference for group work:

*"Cause I like working in groups and not in silence 'cause we can like speak to each other…and I like it if they explain a lot but not too much 'cause sometimes they speak and tell you all the answers and then you're like… so I'd like them if they let us go on with the questions and then check the answers afterwards. (*Female, Year 9)

"*I think we should work with each other more, and sometimes do lessons on the computer […] They could do a little bit of talking, but put more energy into the teaching and the students would listen more and have fun in the lesson".* (Male, Year 10)

A few students, especially more confident students in higher sets, preferred working individually. Some students suggested working in pairs, as groups can be too chaotic, but they appreciated the work with at least another person:

I would change it by doing it in pairs. […] Yes, in groups, it is kind of hard [because cause] some people don't want to work and they just want to be naughty, like distract, so sometimes it is better to work in pairs sometimes, it is just easier for me. (Female, Year 8)

"I like working on my own as well because that's like more of a challenge than working in a pair but I prefer like in a pair" (Female, Year 7)

A challenge! (mainly reported by more confident students in higher ability sets)

Well I think one of the things they do is for top set you could maybe give the details of something and then give people a chance to try it and see if people can like figure it out. If it is something that looks like it is do-able, but they normally do, they don't give people the chance to do that, they just try and explain the whole thing and maybe they could go on a bit longer. (Male, Year 11)

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