

Teleprism

Teaching and learning practices in secondary mathematics

School X

Final Project Report

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Teleprism

Teaching and learning practices in secondary mathematics

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Introduction

This report is prepared for **School X** and presents some descriptive analysis of the data collected from students, ideally during the three data collection points of our project.

The project is run by the University of Manchester, by the Teleprism team (www.teleprism.com), and is funded by ESRC (RES-061-25-0538) under the official name "Mathematics teaching and learning in secondary schools: the impact of pedagogical practices on important learning outcomes". The team members responsible for the production of this report are listed below. Please forward any relevant questions to them:

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The project was designed to capture five years of progression (Years 7-11) in slightly over one year of data collection with longitudinal surveys of students (and their teachers) at the beginning and towards the end of the academic year, and at the beginning of the next academic year. This applies for all five secondary year groups (Year 7-11).

The results reported here come from all available data collected at the three data collection points (hereafter DP) of our study:

- DP1: Start of academic year 2011-2012
- DP2: End of academic year 2011-2012
- DP3: Start of academic year 2012-2013

To help you understand more fully the results for your school, we also provide sample averages with a brief summary of the sample compositions and some overall results from the whole project.

The report is split into 3 main sections presenting results at different levels:

- Part 1: Describes the project design and the methods we applied to the data we got from the questionnaires
- Part 2: Presents some overall results from the project, including some results from the qualitative work
- Part 3: Includes results from your school, looking at both overall school level results as well as results split by Year group, with comparisons made mainly between boys and girls within each Year group (if appropriate), as well as between your school and the overall sample for some results.

Note for School X: In order to maintain the anonymity of the participating schools and at the same time make some of the results available, we created School X which consists of students randomly selected from those students who completed all DPs in our study (with the exception of Y11 at DP3, thus Y12 then, for which group we only got data from a small number of schools, not representative of the whole sample).

Part 1: Project description

Project design and sample

The aim of the Teleprism project 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. 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. Table 1 shows the (survey) sample description at each of the three survey data points (DPs), by year group.

Year group cohort	Data Point 1 Start of academic year 2011-2012	Data Point 2 End of academic year 2011-2012	Data Point 3 Start of academic year 2012-2013
7	3974	2679	2510 (Year 8)
8	3073	2000	1667 (Year 9)
9	2733	1823	1527 (Year 10)
10	2157	1562	1355 (Year 11)
11	1837	773	144 (Year 12)
Total	13774	8837	7203

Table 1 - Student sample size at each survey data point, by Year group

As a reminder we present below some information about the participating schools (at the start of the project (Table 2), and their spread across the country (Figure 1).

Age range	Boys only	Girls only	Mixed	Total
11-16	0	2	13	15
11-18	1	5	19	25
Total	1	7	32	40

Table 2 - Basic types of schools



Figure 1 - The distribution of participating schools

Analysis of student surveys: Our approach to constructing measures of learning outcomes

As you may recall, the questionnaire completed by the students included a lot of questions usually grouped under certain themes, like attitudes to mathematics, confidence with mathematics (or self-efficacy), parental involvement and perceptions of teaching practices. In the first report we gave the descriptive analysis of individual items (e.g. frequencies) under each theme in order to present the distribution of students' responses at the first data collection point (DP1).

For some parts of the questionnaire we do the same in this report, and thus give the distribution of responses per DP, if you wish to compare. However for some of the more relevant topics in teaching and learning we thought to give you a flavour of how we are using these data in further statistical analysis.

The starting point of our approach is that there is some underlying construct (or idea/concept) behind the groups of items in the questionnaires, which were brought together after studying previous research literature and looking at other researchers' instruments. This is similar to what you do when you design and administer a (mathematics) test to the students: you hope to measure their mathematical ability (maybe on a particular maths topic). Following this with our questionnaires we intended to measure the following ideas/constructs (with the items related to each one presented in the next sections):

- Parental support/involvement
- Attitudes to mathematics
- Mathematics Self-efficacy
- Perceptions (of transmissionist) teaching

Given the students' responses to the relevant questions we then attempt to validate these aforementioned constructs: in other words to check whether they exist as "measures" (or scales as we call them sometimes), and if not if there are other dimensions relevant and useful. So, our validation process refers to the accumulation of evidence to support validity arguments regarding the students' reported measures. We then employ a psychometric analysis for this purpose, conducted within the Rasch measurement framework, and following relevant proposed guidelines. The Rasch rating scale model (using the Winsteps software) is considered the most appropriate for the scaling involved in this project (i.e. a common Likert type scale). Our decisions about the validity of the measures are based on different statistical indices, such as item fit statistics, category statistics, differential item functioning and person-item maps.

We understand that these technical details are not easily accessible to non-academic readers so we want to avoid going in more depth here. However we list some relevant references at the end of the report for your information, and we will be providing more detail in our website as well (www.teleprism.com). An example of how these statistical indices are used in order to validate the measure of students' 'perceived parental support/involvement' are shown in Appendix 1, while in Appendix 2 we offer an academic conference paper for the construction and validation of the attitudes measures. If you are interested to discuss or learn more about this analytical approach please get in touch by email.

What we present in the next sub-sections are the original parts of the questionnaire used for this analysis along with the outcomes of the procedure (i.e. as extra scores attached on the students dataset and further analysed).

A measure of ‘perceived parental involvement/support’

The part of the questionnaire which was addressing the potential measure/scale of perceived parental involvement/support is shown in Table 3.

How often do your parents/carers do the following?	Never	Rarely	Sometimes	Often	All the time
Check whether you have done your homework [parents1]	1	2	3	4	5
Help you with your homework [parents2]	1	2	3	4	5
Praise or reward you for good grades [parents3]	1	2	3	4	5
Reduce your rewards because of low grades [parents4]	1	2	3	4	5
Find you a tutor to help you with your homework [parents5]	1	2	3	4	5

Table 3 - the items/questions to measure perceived ‘parental involvement/support’

Figure 2 shows the distribution of your school students’ measures of perceived support, along with all students in the sample.

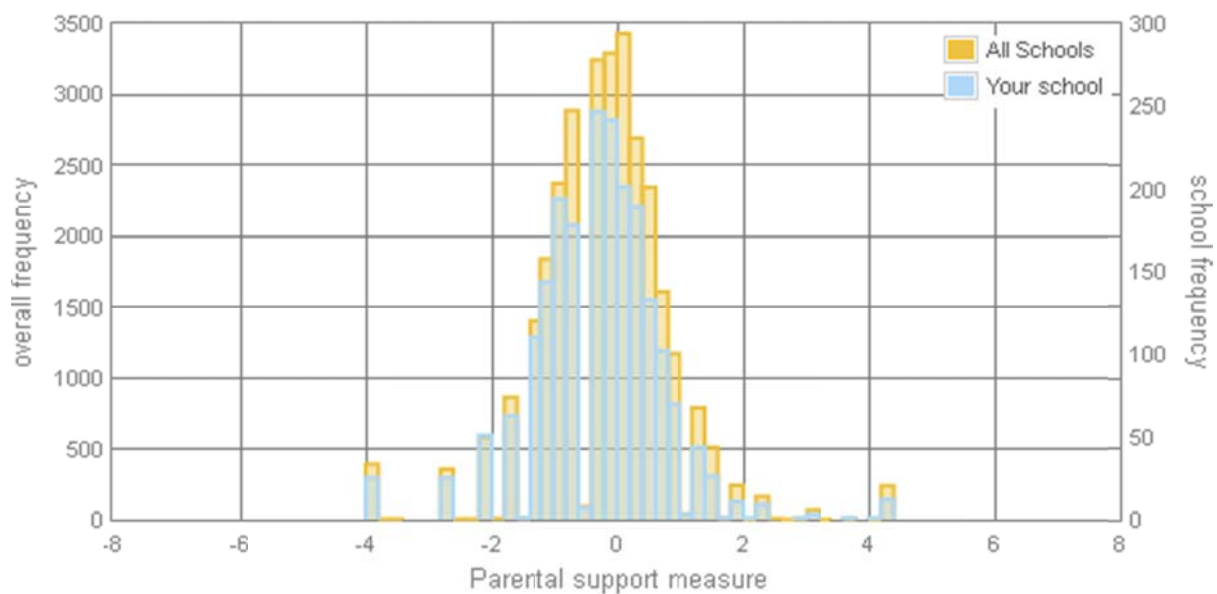


Figure 2 - Distribution of parental support measure of your students compared to overall sample

A few notes are presented here for the interpretation of this figure which are also applicable to the other histograms that follow. First, the measure (of parental support in this case) on the horizontal axis is on a logit scale (a logit can be thought of in a similar way as standard deviation units around the mean): the larger the score the more of the measured construct or attribute. In this case the scores of perceived parental support range from -8 to 8 logits with most of the observations ranging between -4 and 4. A higher score (e.g. 4) denotes much more perceived parental involvement compared to a lower score (e.g. -2). Second, there are two defined vertical axes: on the left hand side the overall frequencies are reported, whereas on the right hand side your school’s frequencies are shown. These should also be considered in the interpretation of the results presented.

As can be seen, in this case your school’s distribution in regards to parental support is very similar to the overall.

Attitudes to mathematics

Table 4 presents the part of the questionnaire we employed with an expectation to create a measure of students' overall attitude to mathematics.

How much do you agree or disagree with the following statements? (Please circle the appropriate number in each line)		Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
1	Mathematics is important to me.	1	2	3	4	5
2	Most people can learn to be good at maths.	1	2	3	4	5
3	My parents/carers like maths.	1	2	3	4	5
4	Maths is one of the most interesting school subjects.	1	2	3	4	5
5	Learning maths is enjoyable for me.	1	2	3	4	5
6	I have a mathematical mind.	1	2	3	4	5
7	I can get good results in maths.	1	2	3	4	5
8	I am interested in learning new things in maths.	1	2	3	4	5
9	In maths you get rewards for your effort.	1	2	3	4	5
10	Being good at maths is something you are born with.	1	2	3	4	5
11	I can learn maths even if it is hard.	1	2	3	4	5
12	I like using maths I am familiar with rather than new maths topics.	1	2	3	4	5
13	I am more worried about maths than any other subject.	1	2	3	4	5
14	I often need help with maths.	1	2	3	4	5
15	Compared to my classmates, I am good at maths.	1	2	3	4	5
16	My parents/carers enjoy solving mathematical problems.	1	2	3	4	5
17	I never want to take another mathematics course.	1	2	3	4	5
18	I would prefer my future studies to include a lot of maths.	1	2	3	4	5
19	I would look forward to studying more mathematics after school.	1	2	3	4	5
20	I would like to be a mathematician.	1	2	3	4	5
21	Maths is important for my future (after school)	1	2	3	4	5

Table 4 - The items under "your feelings towards maths"

The validation results however, as detailed in Appendix 2, did not support our original hypothesis. Instead, we found that it is more useful to create two measures of attitudes towards mathematics, which we defined as:

- Mathematics disposition: this is more related to expressions of behavioural intention for future engagement with mathematics (the higher the score on this measure the more disposed the student is towards further study or engagement with mathematics).
- Mathematics 'identity': this measure is constructed based on items that express mainly feelings and preferences towards mathematics (the higher the score the more positively/strongly the student relates or identifies with mathematics).

Figures 3 and 4 show the distributions of your school students' measures on these two measures, along with the distributions of all students in the sample.

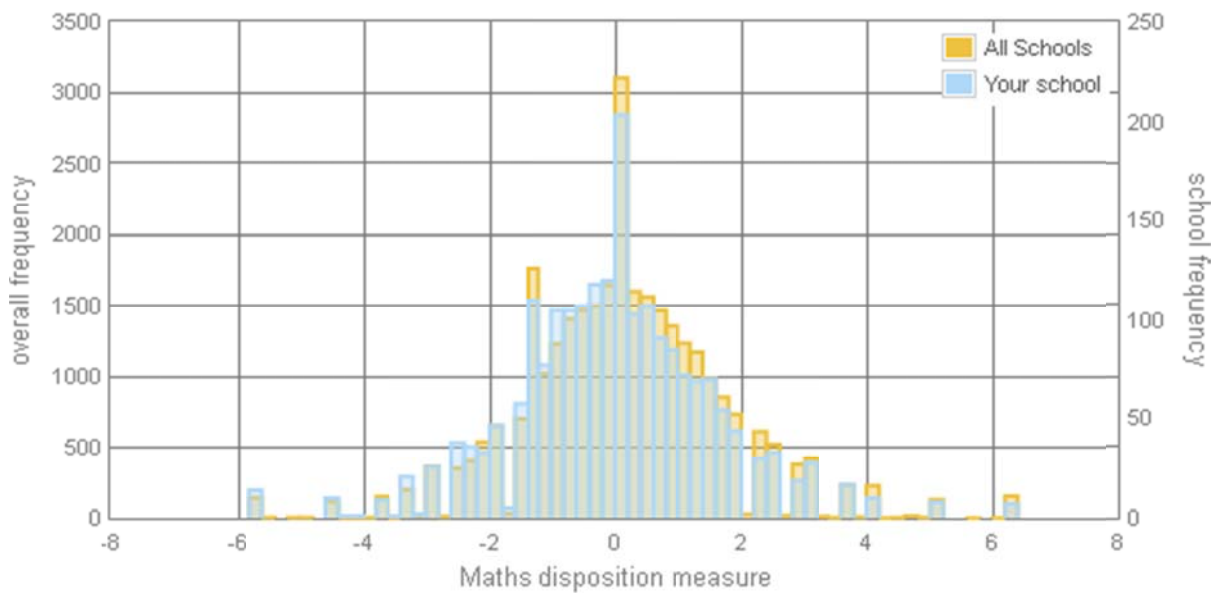


Figure 3 - Distribution of maths disposition measure of your students compared to overall sample

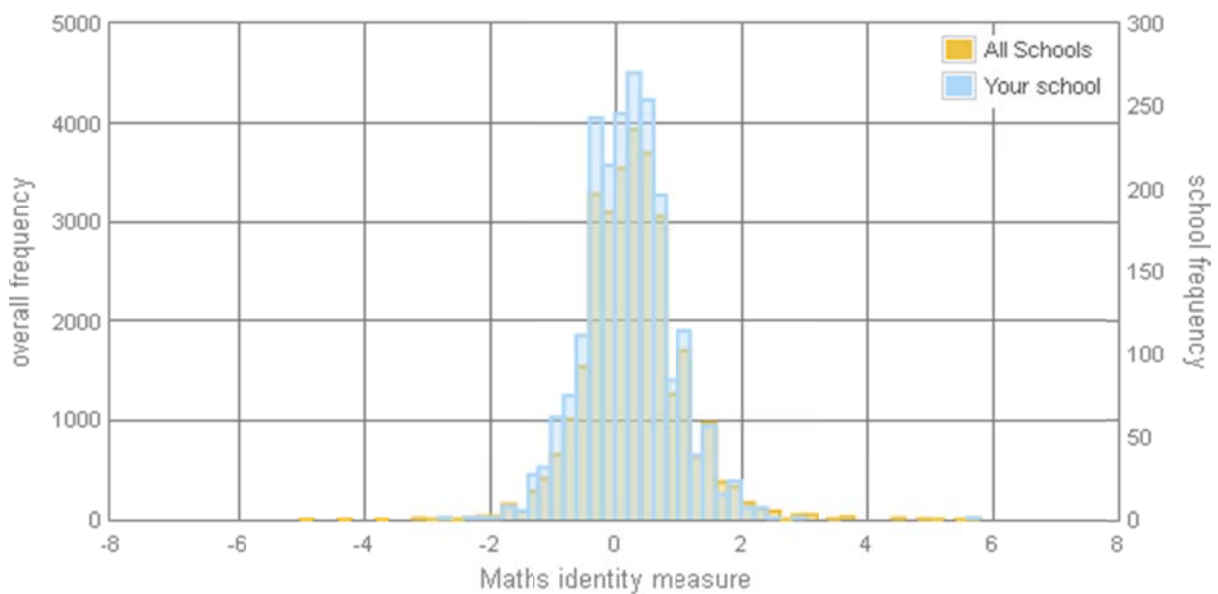


Figure 4 - Distribution of mathematics identity measure of your students compared to overall sample

Mathematics self-efficacy

For the construction of a measure of mathematics self-efficacy we used the items in the final section of the questionnaire, where students were asked to report how confident they felt about their ability to solve different mathematical tasks. An example item from this section is shown in Figure 5, and the initial instructions for this section were as follows:

“In this section, we are asking you to say how confident you would be at using mathematics to solve different problems. We don’t ask you to actually solve the problems.”

5. How confident are you to calculate the range of a set of numbers such as:

A rugby team played 7 games.

Here is the number of points they scored in each game.

3 5 8 9 12 12 16

(a) Work out the range.

.....

Not confident at all Not very confident Fairly confident Very confident

Figure 5 - Example self-efficacy item

Figure 6 shows the distribution of your school students' measures of mathematics self-efficacy, along with the distribution of all students in the sample.

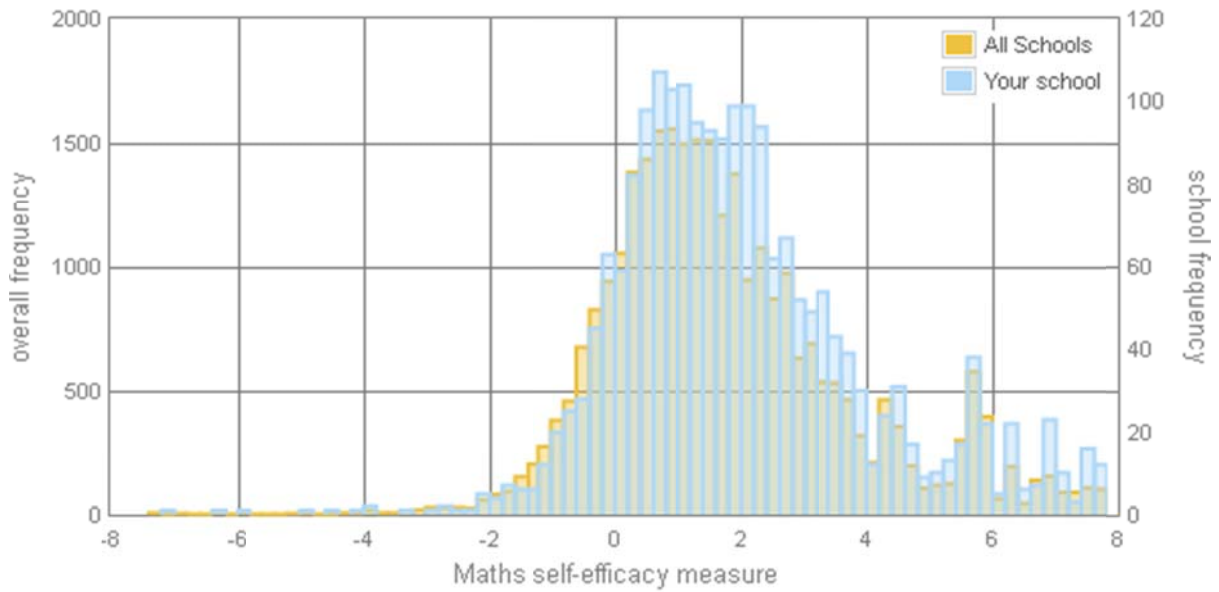


Figure 6 - Distribution of mathematics self-efficacy measure of your students compared to overall sample

Teaching perceptions

As part of the surveys, students were also asked about different activities that may or may not be taking place in their mathematics classes. Figure 7 lists these activities in order of frequency reported at DP1:

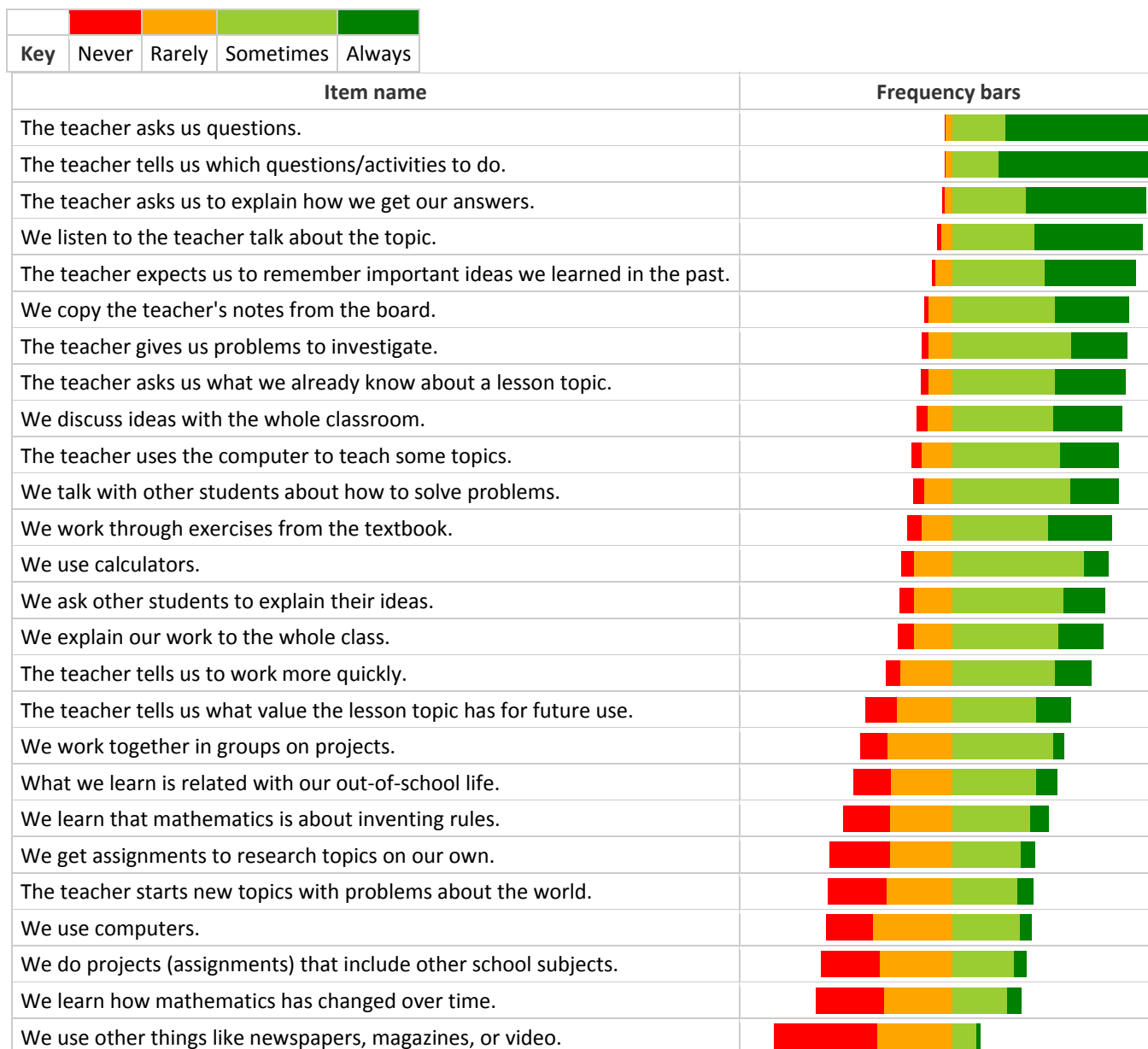


Figure 7 - Frequency bars of different teaching practices happening during maths lessons (at DP1)

Based on the information given by the students, and with the help of the Rasch model of measurement, we have been able to construct two measures of students' perceptions of the teaching they receive at their maths lessons:

- **Teaching Variation:** the higher the score on this measure the more diverse the maths lessons from students' perspective.
- **Transmissionist teaching:** the higher the score the more 'traditional' or teacher-centred the practices as reported by the students.

Figures 8 and 9 show the distributions of your school students' measures on these two measures, along with the distributions of all students in the sample.

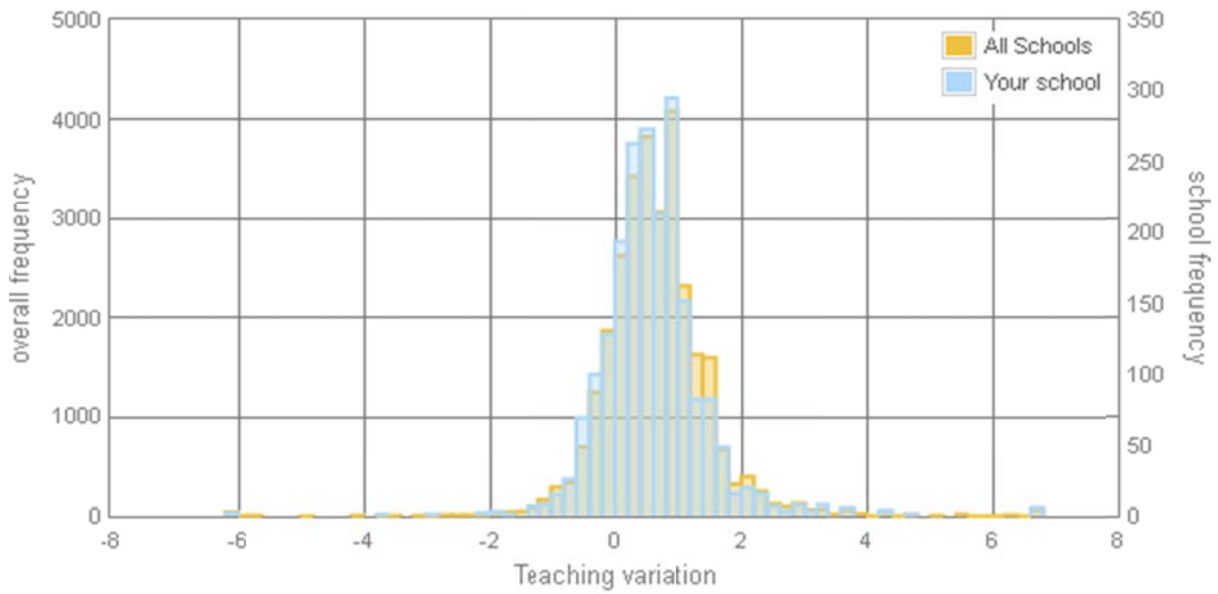


Figure 8 - Distribution of perceived teaching variation measure of your students compared to overall sample

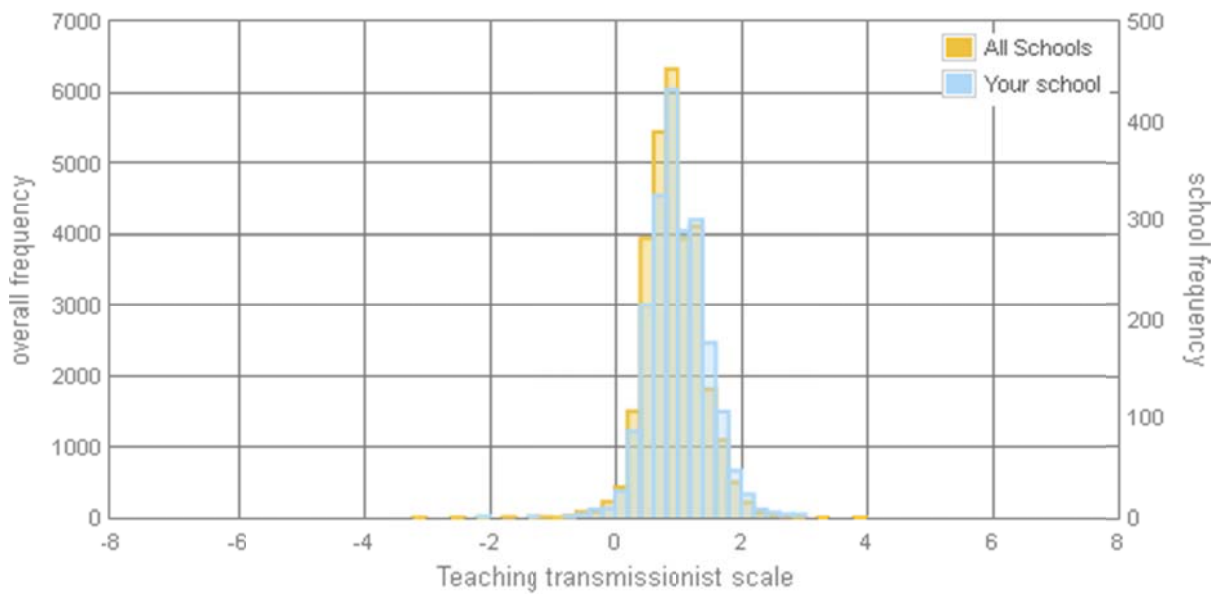


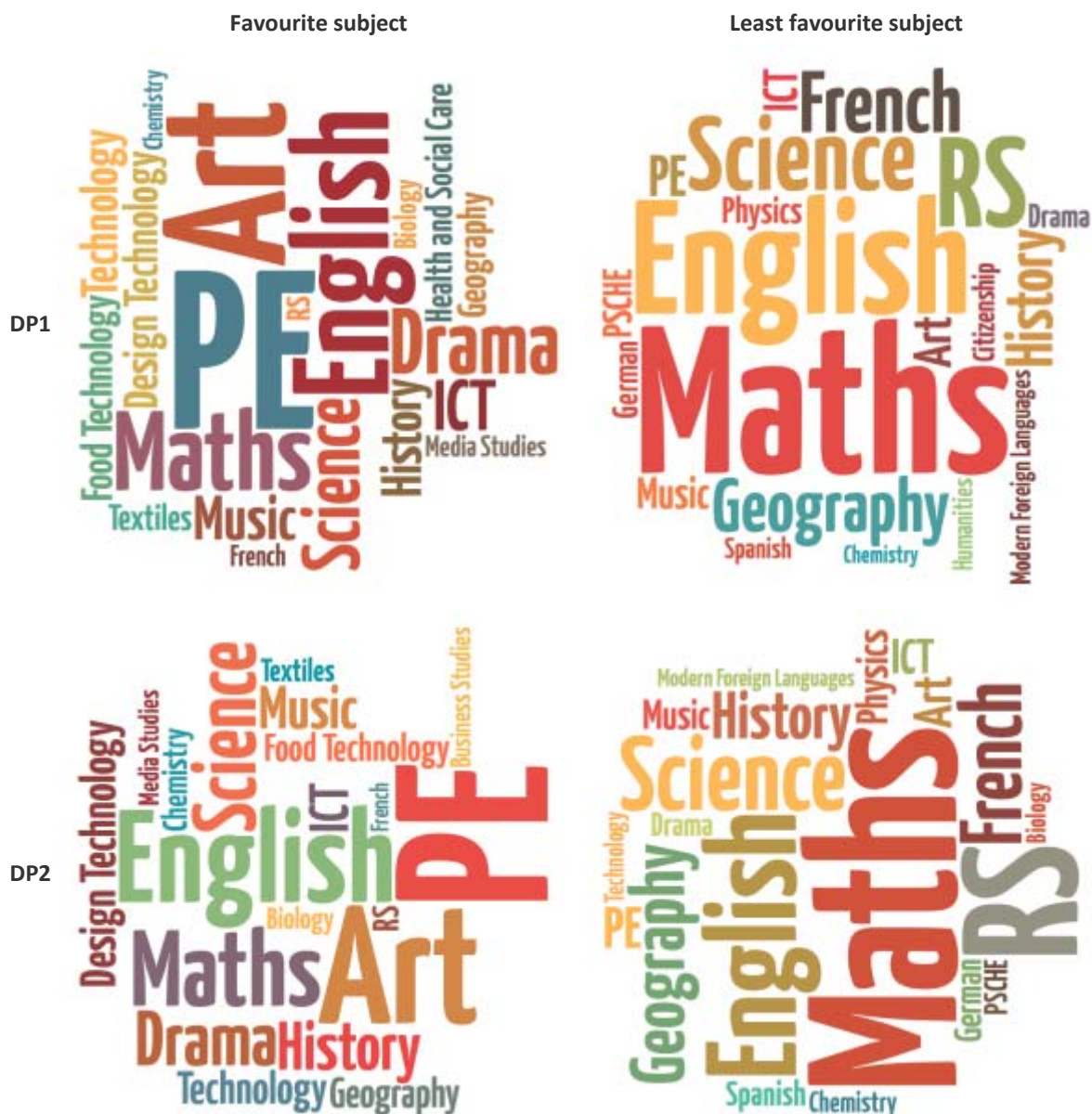
Figure 9 - Distribution of perceived teaching transmissionist measure of your students compared to overall sample

The measures presented in this section in the form of histograms will be further used and analysed in subsequent parts of the report.

Part 2: Overall results from the project

Students' favourite and less favourite topics

We asked the students to report their favourite and less favourite subjects at school. Students' response to this questions are summarised here, in particular students' top 20 favourite and least favourite subjects. The 'word clouds' below (Figure 10) were created using Tagxedo (<http://www.tagxedo.com>) and show the 20 most favourite and least favourite subjects of these students in all participating Year groups from 7 to 11. The font size indicates the order of preference and their relative frequencies. The actual frequencies reported for each of these subjects as either favourite or least favourite are shown below in Tables 5 and 6.



Favourite subject

Least favourite subject

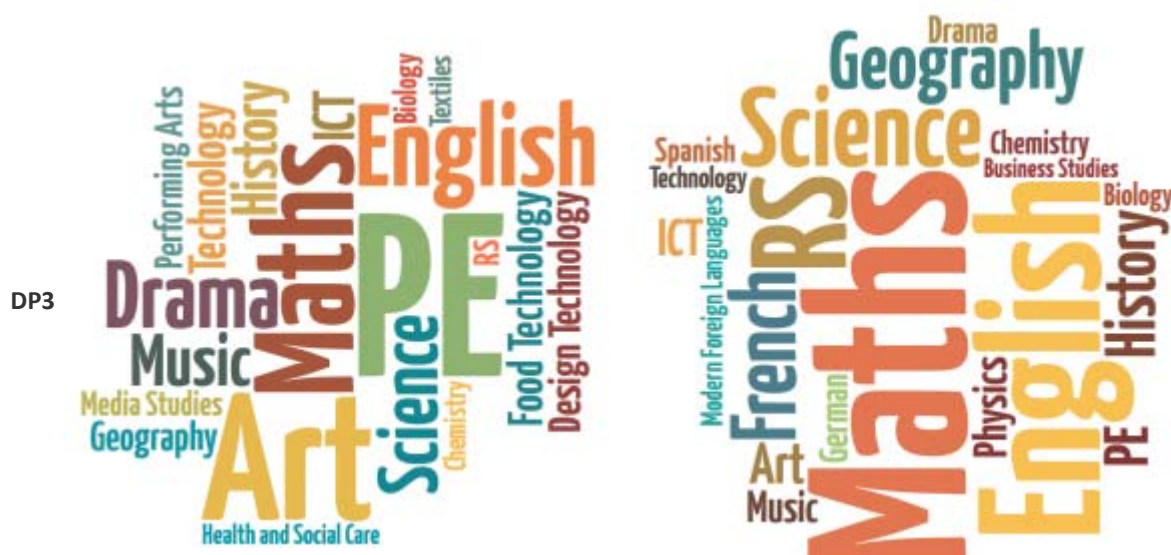


Figure 10 - Favourite (left) and least favourite subjects (right) across the data points

DP1	Count	DP2	Count	DP3	Count
PE	2299	PE	2436	PE	2299
Art	1255	Art	1287	Art	1255
Maths	509	English	580	Maths	509
English	494	Maths	553	English	494
Drama	458	Science	497	Drama	458
Science	377	Drama	473	Science	377
Music	290	History	337	Music	290
History	289	Music	323	History	289
ICT	276	ICT	314	ICT	276
Tech.	153	Design Tech.	202	Tech.	153
Food Tech.	146	Tech.	187	Food Tech.	146
Design Tech.	119	Geography	182	Design Tech.	119
Geography	117	Food Tech.	140	Geography	117
Performing Arts	82	RS	81	Performing Arts	82
RS	78	Chemistry	76	RS	78
Media Studies	74	Textiles	76	Media Studies	74
Biology	70	Biology	69	Biology	70
Chemistry	67	Media Studies	66	Chemistry	67
Textiles	53	Business Studies	62	Textiles	53
HSC	50	French	58	HSC	50

Table 5 - Favourite subjects across the data points

DP1	Count	DP2	Count	DP3	Count
Maths	2397	Maths	1420	Maths	1250
English	1544	RS	927	English	911
RS	1464	English	838	RS	804
Science	1208	Science	780	Science	726
French	1157	French	765	French	698
Geography	1012	Geography	644	Geography	593
History	831	History	577	History	532
PE	567	PE	402	PE	327
Art	370	Art	266	Art	229
ICT	363	ICT	236	ICT	227
Music	294	Physics	224	Physics	204
PSCHE	198	Music	219	Music	158
Physics	197	German	178	German	151
German	175	Spanish	153	Drama	131
Drama	170	Drama	148	Spanish	99
Citizenship	159	PSCHE	107	Chemistry	95
Spanish	151	Chemistry	93	Biology	62
Humanities	131	Technology	73	MFL	58
MFL	97	Biology	58	Technology	50
Chemistry	95	French	58	HSC	50

Table 6 - Least favourite subjects across the data points

Association of Mathematics preference and perceptions of teaching practices

Central to our study is the association between teaching practices and students' maths attitudes and dispositions. As a proxy of this relationship we first present here how the two measures of students' perceptions of teaching are related to the students reported preferences of mathematics. Students were categorised based either in the Favourite group (if they reported maths as their preferred subject), in the Least favourite group (if maths was reported as their least favourite) or in the Indifferent (if they did not mention maths). The means and confidence intervals of the two measures per student category are shown for each of the three data points, in Figure 11.

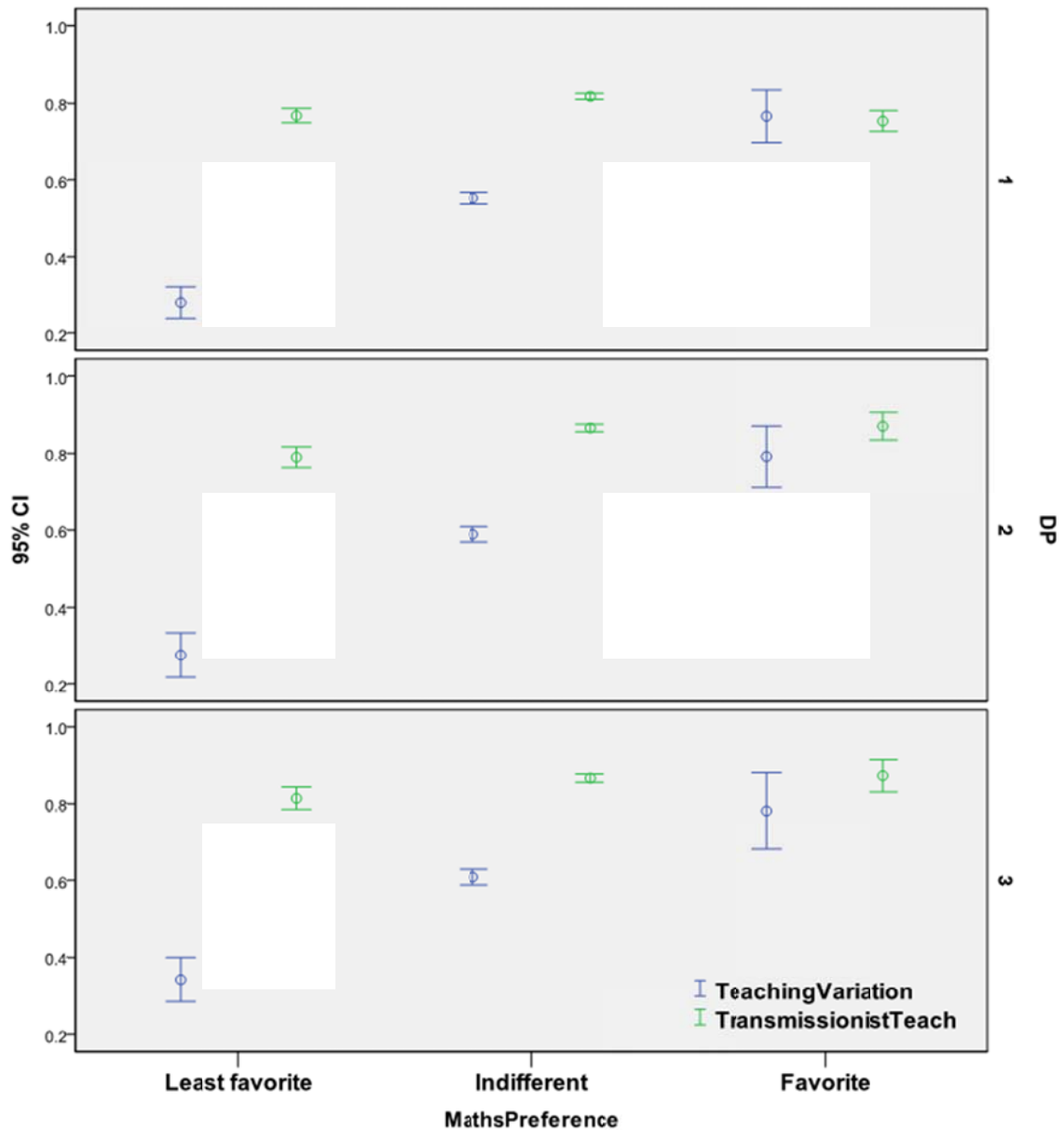


Figure 11 - Mean students' perception of teaching by preference to Maths group

As can be seen, there is a consistent and considerable difference in students' 'teaching variation' scores, with students in the favourite group scoring significantly higher than the other two groups: the more diverse the maths lesson the more the students report it as their favourite. The picture with the transmissionist scale is more mixed with no apparent consistent differences.

In the following figures we present separate figures for the association between students' reported preferences and teaching related variables, for each Year group.

A note on the interpretation of figures: the figures show the means of each group (denoted by the circle) with the line bars denoting the confidence interval around the means. This allows for comparisons to be made as well as noticing whether any differences are statistically significant (i.e. when the confidence intervals are not overlapping).

Let's take Figure 12 for example with the results for Year 7 in regards to students' perceptions of teaching variation. The means of students' perceptions of teaching variation at DP2 (blue line) appear to increase as we move from the group of those reporting maths as their least favourite topic, to those indifferent and then those reporting maths as their favourite topic. These differences are statistically significant since the confidence intervals are not overlapping.

We can also observe potential differences between each group's mean scores at each DP: there are no apparent significant differences at the two extreme groups (favourite and least favourite) however a significant (even small) difference can be noticed on the 'indifferent' group (which also happens to be the larger in regards to sample size).

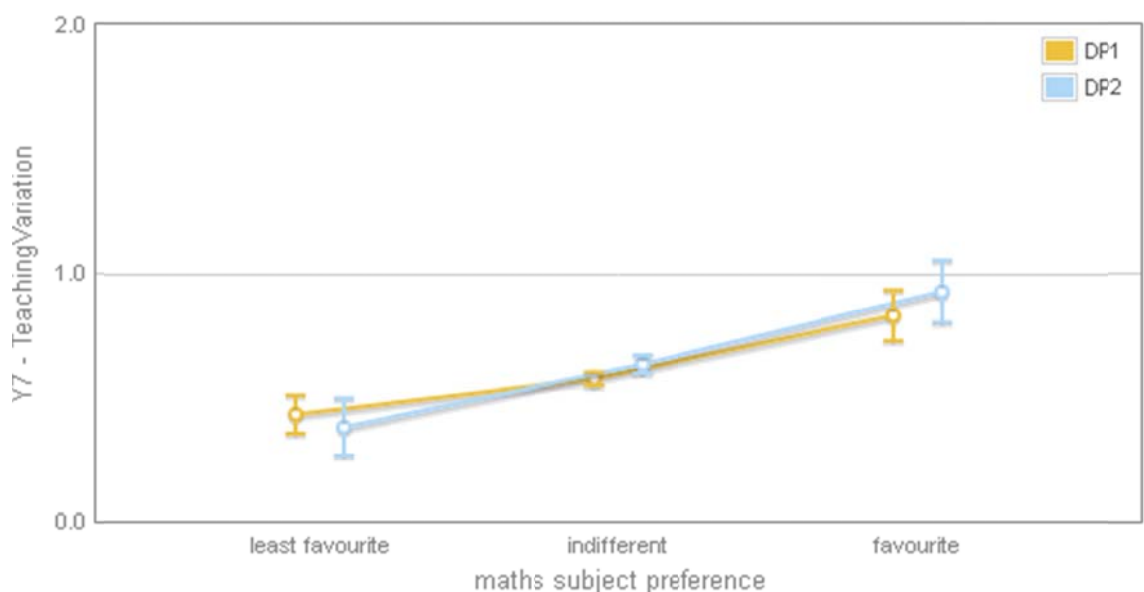


Figure 12 - Mean Y7 students' perceptions of teaching variation by preference to mathematics

Similar results are shown with Figures 13 to 16, for Years 8 to Year 11.

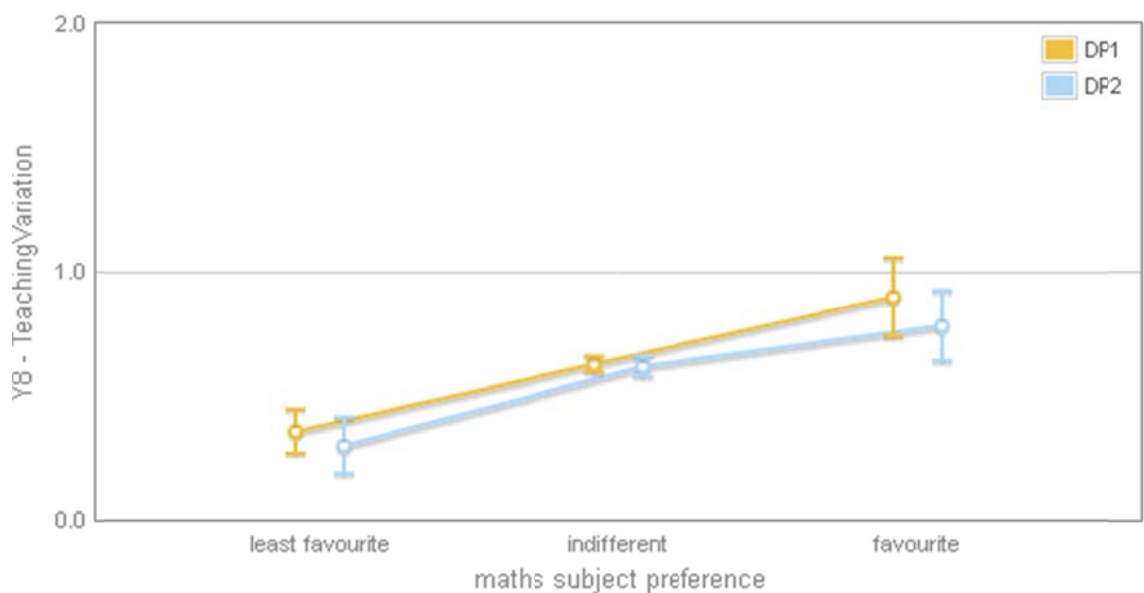


Figure 13 - Mean Y8 students' perceptions of teaching variation by preference to mathematics

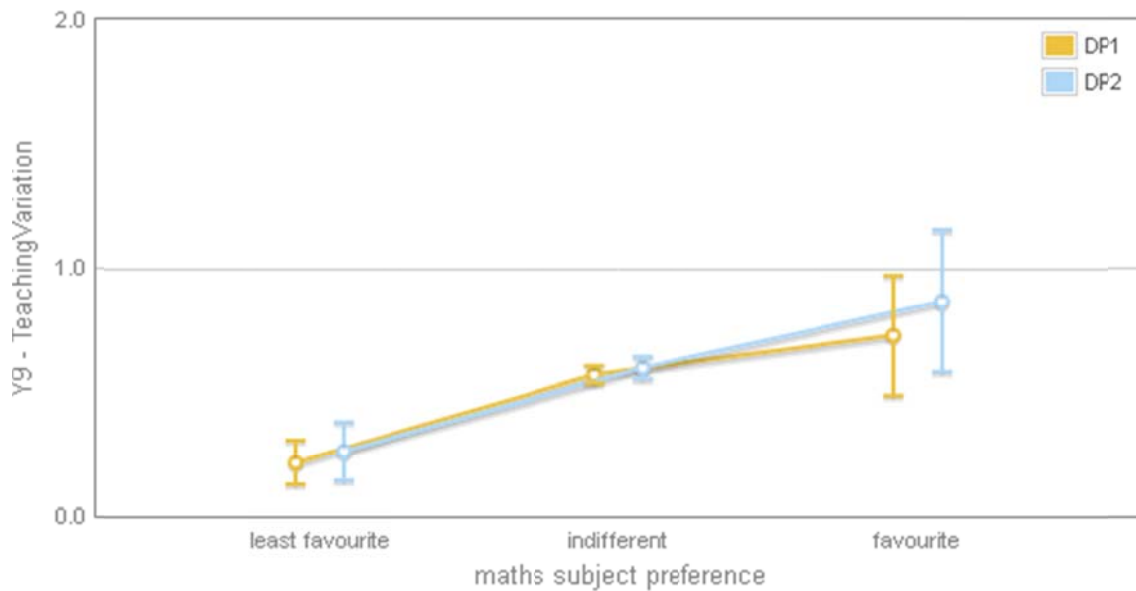


Figure 14 - Mean Y9 students' perceptions of teaching variation by preference to mathematics

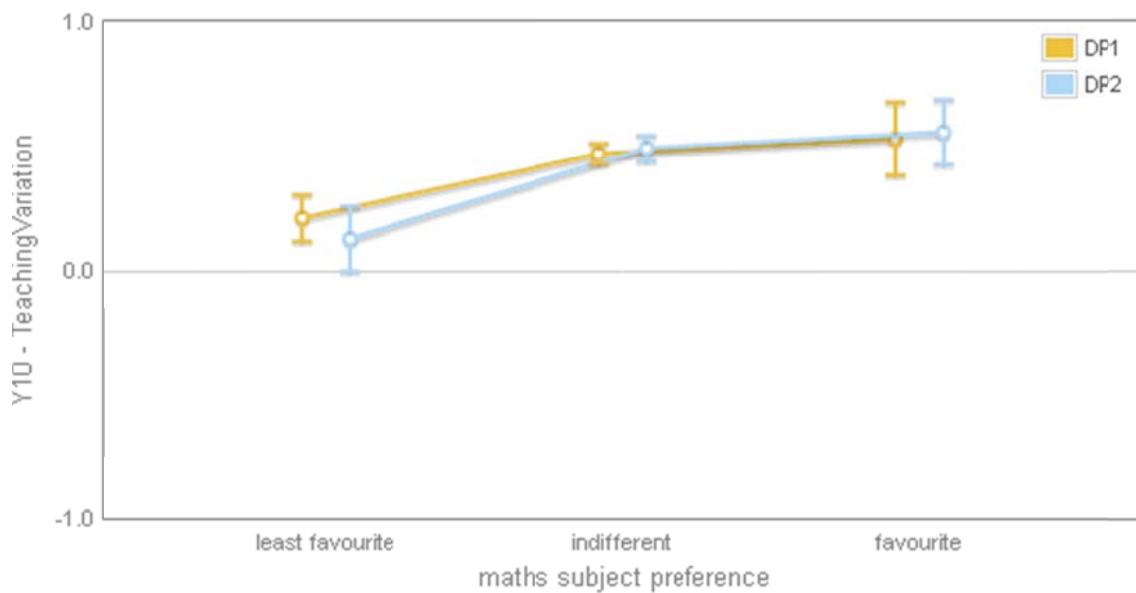


Figure 15 - Mean Y10 students' perceptions of teaching variation by preference to mathematics

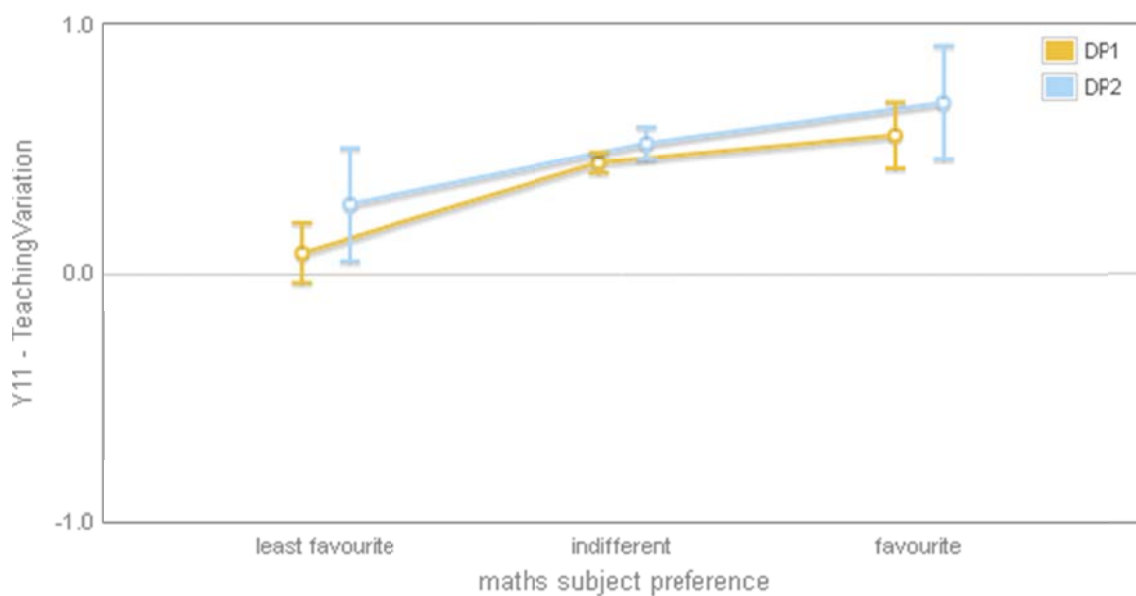


Figure 16 - Mean Y11 students' perceptions of teaching variation by preference to mathematics

The results from figures 12 to 16 for the different Year groups seem to accord with the overall results of Figure 11 in regards to students' perceptions of teaching variation: there appears to be a consistent and significant difference in students' 'teaching variation' scores, with students in the favourite group scoring significantly higher than the other two groups: the more diverse the maths lesson the more the students report mathematics as their favourite. The pattern is stronger and more consistent for the younger Year groups (Year 7 to Year 9). For Years 10 and 11 the difference is only significant between the 'least favourable' group compared to the other two groups, whereas for Year 11 differences are only evident for DP1 (this is probably due to the considerable reduction of the sample size in this cohort).

The picture with the transmissionist scale is more mixed with no apparent consistent differences as shown with Figures 17 to 21. Maybe the common pattern across the Year groups is an overall increase in the means when moving to DP2: students' perceived the teaching to be more transmissionist towards the end of the academic year compared to the start (probably due to exam preparations). Further patterns can be found when looking at the individual year groups' results.

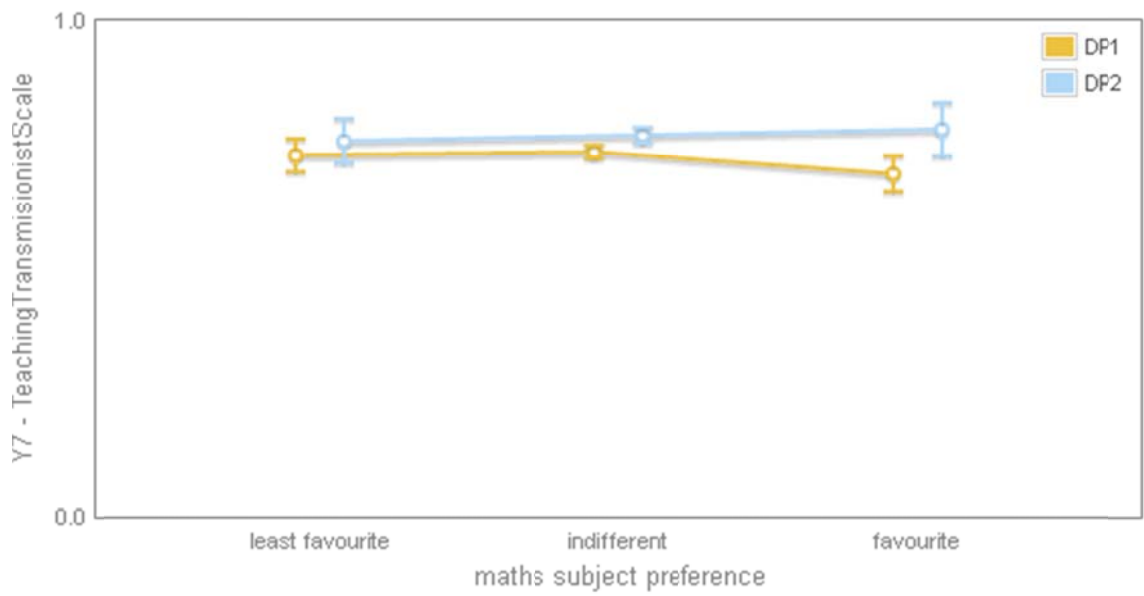


Figure 17 - Mean Y7 students' perceptions of transmissionist teaching by preference to mathematics

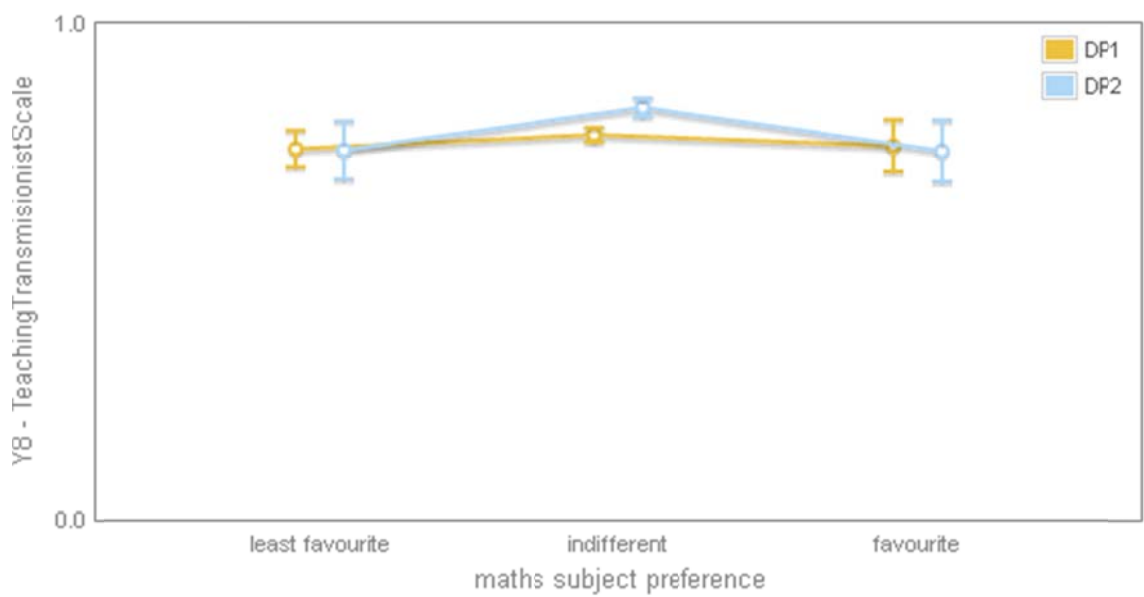


Figure 18 - Mean Y8 students' perceptions of transmissionist teaching by preference to mathematics

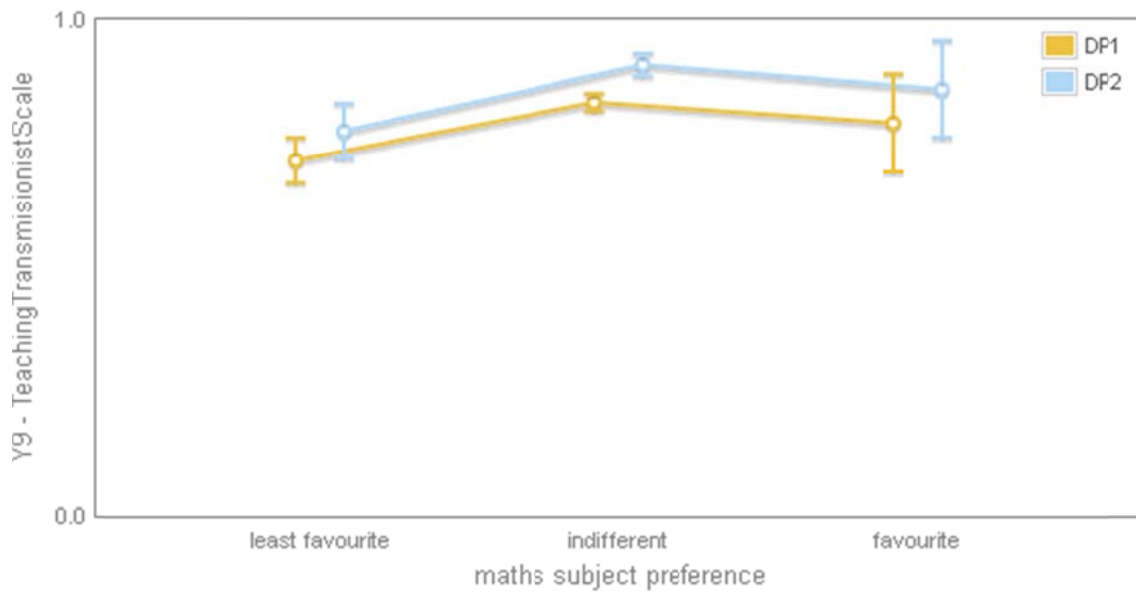


Figure 19 - Mean Y9 students' perceptions of transmissionist teaching by preference to mathematics

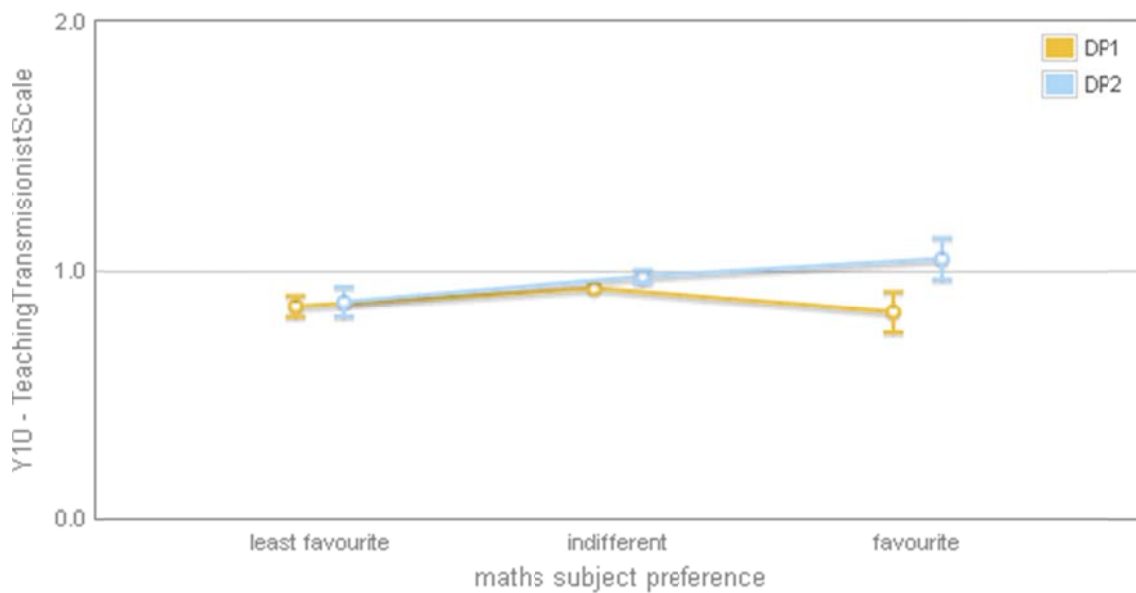


Figure 20 - Mean Y10 students' perceptions of transmissionist teaching by preference to mathematics

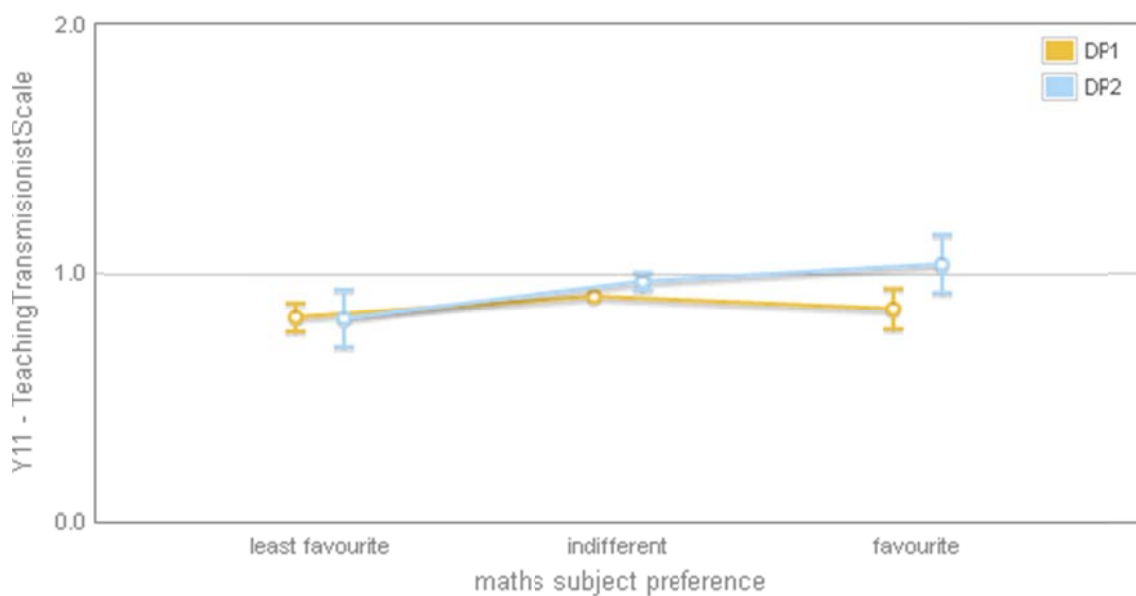


Figure 21 - Mean Y11 students' perceptions of transmissionist teaching by preference to mathematics

Some results from the interviews: The ideal maths teacher and lesson

The Interview Data

The sample of students interviewed 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 and 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. The majority of students talked about somebody who 'explains it well'. Some students appreciated a good relationship with their teachers. The qualities of the ideal maths teacher are summarised below with some quotations given by students under each theme afterwards:

- *Has a sense of humour*
- *Is approachable, friendly & understanding*
- *Is strict and able to 'control' a class*
- *Always provides help*
- *'Explains it well'*
- *Provides explanations repeatedly*
- *Can provide additional one-to-one when required*
- *Monitors students' involvement and 'pushes' them to achieve their best*

Has a sense of humour

- *"... funny... jolly" (Y11, Male)*
- *"make it... fun teachers that looks like the kids are enjoying it, but they still need to learn at the same time" (Y9, Male)*
- *"Funny and they help you loads and don't shout" (Y9, Male)*
- *"Funny teacher, who explains and he has a laugh now and again, not like a dead miserable one" (Y9, Male)*

Is approachable, friendly, understanding

- *"I think like a maths teacher needs to be approachable because some teachers I won't go near because I would think that they just wouldn't understand what I am on about; because if I didn't know what I was doing I would feel really self-conscious that I didn't know what I was doing, they would think I was stupid or something. They need to be friendly and stuff, not too friendly because what happened he was too friendly so we always messed about" (Y11, Female)*
- *"they're just like you just feel comfortable with them because they're helping you and talking nice to you" (Y7, Female)*
- *"Someone that listens and is patient because some children really don't understand and some people do and someone who is understanding and is obviously quite good at Maths to be able to teach the pupil" (Y10, Female)*

Is 'strict' & able to 'control' the class

- *"... kind but strict when needed and whenever you need help she'll help you unless it's something easy then she'll leave you on your own to work it out"* (Y7, Male)
- *"Well I think it's important to be strict but they should understand that we should be allowed, you know, to help one another out it shouldn't be deadly silent. As long as we're like talking about like the topic that's alright"* (Y11, Female)
- *"He's really smart but he couldn't like control the class because I was in a very giddy class..."* (Y11, Female)
- *"They'd have to be like quite strict so that all the class isn't like naughty or anything but at the same time they'd have to be quite nice like help you and enjoy helping you. Like I wouldn't want a moody teacher"* (Y8, Female)

Always provides help

- *"Like if you are stuck, helps you"* (Y7, Female)
- *"Nice and actually teach you proper stuff and helps you all the time"* (Y10, Female)
- *"Just honest, understands, kind and able to well willing to put that extra work out to help you when you really need it most"* (Y11, Female)
- *"Someone who's helpful and considerate and... tries to make sure everyone's on the same level of understanding"* (Y10, Male)

'Explains it well'

- *"Like Mr X 'cause he's dead nice and if you don't know he explains and if you don't know he doesn't shout"* (Y7, Male)
- *"she understands you, like if you don't get it, she'll help and she'll do whatever she can to help. And she explains the task really well"* (Y7, Female)
- *"I'd like a teacher that would explain things and if you were struggling help you, rather than say 'oh well just leave that then if you don't know it' because then you won't know it in your exam"* (Y11, Female)

Provides explanations repeatedly

- *"Nice and not shout, but tell you enough times what you are doing so you know"* (Y9, Female)
- *"They go... I think they should... half the lesson go through questions, then the other half they go through questions, the same questions again, 'cause that's what I found, I find it very helpful when they go through the same thing like twice or three times but not at the same time"* (Y11, Male)
- *"Do the question so many times and not like just explain it once"* (Y11, Female)

Can provide additional one-to-one when required

- *"I would probably say someone who is friendly towards you, who teaches you individually, not just teaches the whole class and I would probably say someone who isn't very stressful; so they are quite relaxed"* (Y11, Male)
- *"One that doesn't just talk to the group in general, but like they help the ones... well they help everybody but... the ones that really aren't getting it, they sit them like together and they talk to them like in general to each person"* (Y9, Male)

Monitors students' involvement and 'pushes' them to achieve their best

- *"our books don't really get marked often, they get marked once a month"* (Y9, Male)

- *“but I think our teacher could go round to everyone more because our teacher didn't come over to our table today so for all he knows we did nothing. But we did but he doesn't know that so I think he could check on people more”* (Y9, Female)
- *“someone that pushes you and keeps you going and encourages you”* (Y11, Female)
- *“Well there'd be walking round the class helping like other people and then... every like ten minutes or something they'd be explaining, going over questions...”* (Y11, Male)

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”* (Male, 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”* (Male, 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)

Students' transitional experiences to secondary school

The following three questions were asked of the 904 new Year 7 students that joined at data point 3, coming up from primary to secondary school:

- What has been the biggest change for you, moving from primary to secondary school?
- Has the way you been taught by teachers changed? If so, how?
- How is mathematics different from primary school?

There is some overlap across the questions which came up in the responses, but the most common categories of responses are given below, along with some example quotes.

Note that students often mentioned more than one change, so total percentages will of course be over 100%!

The biggest change moving from primary to secondary school

We got responses from a total of 717 students to this question. The most common responses about their transition from primary to secondary schools were related to:

Friends (31%)

This includes leaving old friends as well as making new friends.

- *"trying to make new friends"*
- *"none of my friends came with me so I had to make lots of new friends"*
- *"not knowing everyone in my year group"*
- *"meeting new friends"*

School size (25%)

- *"bigger school"*
- *"finding my way around my new school"*
- *"it's much bigger than primary"*
- *"there are a lot more people"*
- *"getting lost..."*

Homework (22%)

- *"having more homework"*
- *"three homework a night whereas in my primary school I had 3 pieces a week"*
- *"more homework and more work"*
- *"loads more homework"*
- *"the homework has been a big change for me"*

Moving around (22%)

- *"finding the way to different lessons in the school"*
- *"having to go from one class to another"*
- *"the different rooms around the school"*
- *"moving around classes all the time"*
- *"knowing which classroom I have to go to next"*

Harder work (9%)

Unsurprisingly, work gets harder!

- *“getting used to harder things in lessons”*
- *“it’s a lot harder than primary”*
- *“the work has got harder...”*
- *“learning more and harder work”*
- *“the work and homework has gone harder”*

Teachers (8%)

A common response was to note that rather than having a single teacher in primary school, they now had different teachers for each subject.

- *“having different teachers for different lessons”*
- *“having lots of different teachers and having to remember their names”*
- *“meeting all of the new teachers”*
- *“plenty of different teachers all around school”*
- *“I have to get used to a lot more teachers than just having one like in primary”*

Lessons (8%)

- *“doing different subjects”*
- *“we have more lessons now”*
- *“there is a wider variety of lessons which I enjoy”*
- *“it’s fun and better than primary because you do different lessons than you do in primary”*

Personal Growth (6%)

- *“having a responsibility for my own things and to go to the rooms I have my lessons in”*
- *“being independent”*
- *“we are given more responsibility”*
- *“the organisation skills required to get through the school day”*
- *“learning to be more independent and having a big responsibility”*

Notable low frequencies are mentions of bullying (<1%), school uniform (1%) and food (1%).

How the way you were taught by teachers changed

We got responses from a total of 663 students to this question. The most common responses about teaching or teacher related changes are listed below.

Strictness (21%)

- *“a bit more stricter”*
- *“stricter but friendly”*
- *“yes, a lot stricter”*
- *“they’re more stricter and they treat you more like a teenager than a child”*

Challenge (16%)

- *“they push you more and challenge you more often”*

- *“they make us work harder”*
- *“they teach more advanced things”*
- *“they expect so much more of you”*

No change (16%)

- *“I don’t think it has changed”*
- *“no, it hasn’t changed since primary”*
- *“not really, they use similar methods”*

Support (11%)

- *“they help me more than primary school”*
- *“yes they help you more”*
- *“they give you a lot of advice and also tell you clearly what you have to do in lessons and in homework”*
- *“the teachers explain things a lot more and are always happy to help”*

Multiple teachers (8%)

- *“we have different teachers for each subject”*
- *“we have more teachers now”*
- *“I haven't got just one teacher now I have a different teacher for every lesson”*
- *“I think different teachers have different teaching strategies so it has been quite a change”*

Learning different methods (7%)

- *“a little there are some different methods...”*
- *“they show you different ways of doing things”*
- *“yes, the teacher taught me new methods”*
- *“yes, because they teach you different ways if you don't get it”*

Teaching methods (6%)

- *“they do less examples than in primary”*
- *“we have to copy loads of notes as in primary we didn't”*
- *“In maths we start with a small problem or ten quick questions”*
- *“you do more work in your books”*

Explanations (6%)

- *“they explain it better and give more help and instructions”*
- *“I think the teachers explain everything more clearly”*
- *“they explain it a lot more with what we have to do and help us whenever we want help”*
- *“I always know what I'm doing because the teachers explain properly and I understand”*

How mathematics is different from primary school

There were 719 responses to this question.

Difficulty (42%)

- *"it's more challenging and more enjoyable"*
- *"it is a lot harder"*
- *"it is more challenging however I enjoy a challenge"*
- *"it has become more complicated we look at each part of maths in more depth"*
- *"it is more harder and I have learnt new things"*
- *"harder sums and more complicated sums than primary"*

Similarity (difference or not) (15%)

- *"we sometimes do different methods from what we were taught in primary"*
- *"we do a lot of different ways to do stuff"*
- *"I'm learning more things in different ways"*
- *"there are a few different methods to the ones in primary"*
- *"it's not"*
- *"no, it is the same"*
- *"it's not that different"*

Topics (11%)

- *"more topics"*
- *"we change topics more often"*
- *"you learn different subjects"*
- *"we are doing lots of different topics"*

Homework (5%)

- *"more homework more topics"*
- *"it's harder and you get more homework"*
- *"there is more homework"*

Fun (5%)

- *"we do more fun activities"*
- *"it is more fun"*
- *"it's harder but more fun"*
- *"...the mathematics seems more interesting too"*

Technology (4%)

- *"you use computers"*
- *"we use computers sometimes while at primary school we never did"*
- *"we get to do it on the computer sometimes"*
- *"we bring calculators to classes however we were barely ever allowed to use calculators in primary"*

Less frequent responses included mentioning (increased) workload (2%), easier work (3%) and 'better' (3%).

Part 3: Personalised Results for your school

Your school results - overall

Sample size at each data collection point

Table 7 shows the split of students who took part in the surveys from your school, by gender in each participating year group.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Year 7	61 (20.7%)	85 (19.2%)	61 (20.1%)	90 (20.3%)	60 (25.0%)	85 (23.7%)
Year 8	43 (14.6%)	105 (23.8%)	46 (15.2%)	104 (23.5%)	46 (19.2%)	103 (28.7%)
Year 9	65 (22.1%)	84 (19.0%)	68 (22.4%)	81 (18.3%)	67 (27.9%)	81 (22.6%)
Year 10	60 (20.4%)	89 (20.1%)	61 (20.1%)	87 (19.6%)	62 (25.8%)	87 (24.2%)
Year 11	65 (22.1%)	79 (17.9%)	67 (22.1%)	81 (18.3%)	5 (2.1%)	0 (0.0%)
Totals	294 (100%)	442 (100%)	303 (100%)	443 (100%)	240 (100%)	359 (100%)

Table 7 - Gender split by year group

School measures for all year groups by data point

In this section we present some overall comparisons with the constructed measures by DP and Year group. These figures give the means per group and the confidence intervals around the means and can thus be interpreted in the same way as detailed earlier.

Figure 22 shows the means of students' perceived parental support. There is a noticeable drop in these scores as students get older and as we move on from DP1 to DP2 and DP3. Statistically significant differences can be observed between year groups at each DP: for example Year 7 students are scoring significantly higher compared to all other groups at DP1, and compared to Years 9 and 10 at DP2 and DP3.

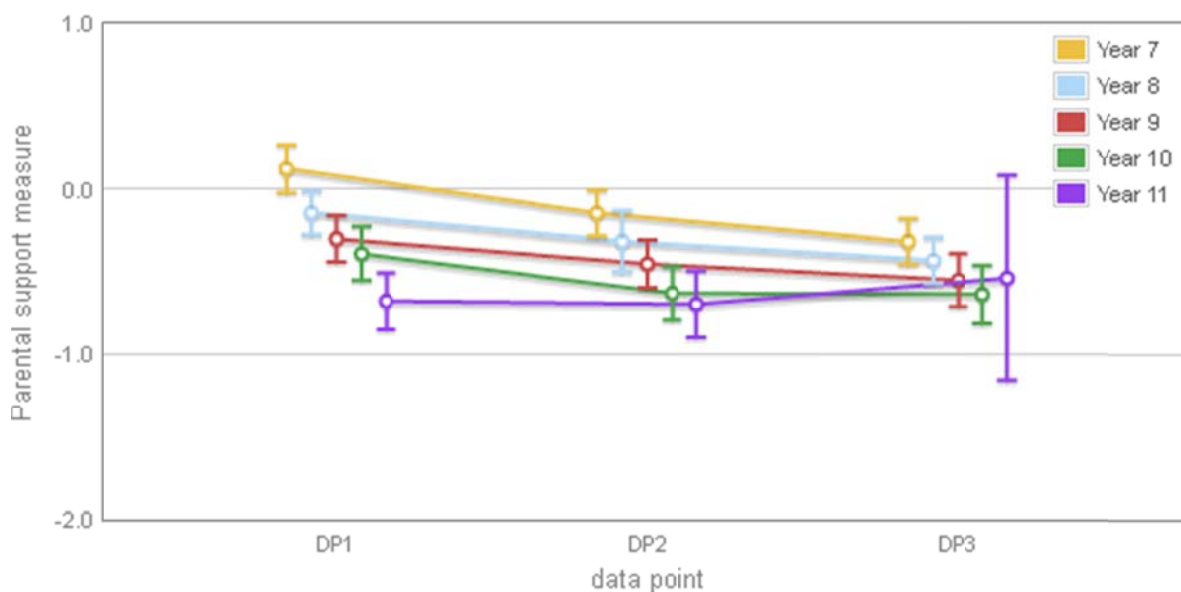


Figure 22 - Mean parental support measure

Figures 23 and 24 show the means of students' scores on the two attitudinal measures (dispositions and identity). There is a noticeable drop in both scores as students get older, particularly obvious in DP1 by the difference in the year groups means. Year 7 is significantly higher in their dispositions compared to all other year groups, whilst for identity the younger year groups (Y7 to 9) score significantly higher compared to Years 10 and 11 (but not significantly different when compared between each other). Another observed pattern regards changes between DP1 and later data collections: For younger year groups it seems to be a consistent drop especially moving from DP1 to DP2, however for Year 10 there is not such a trend since the means are stable.

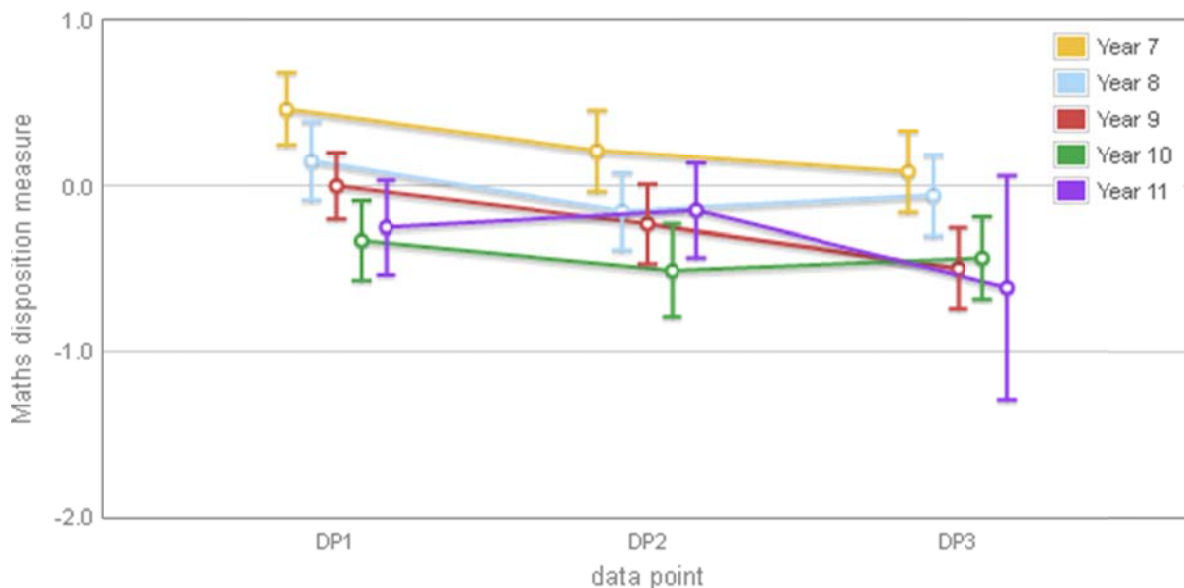


Figure 23 - Mean mathematics disposition measure

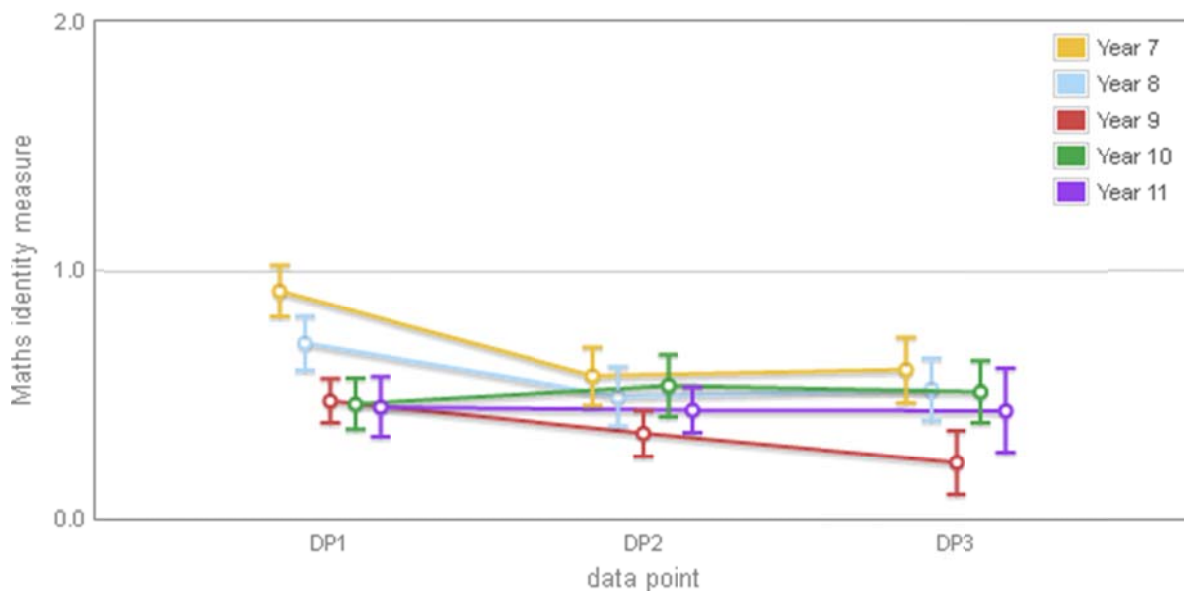


Figure 24 - Mean mathematics identity measure

Figure 25 shows the means of students' scores on the mathematics self-efficacy measure. Here the pattern is the opposite looking at Year groups: students' in older year groups score higher compared to younger year groups. There is also an observed increase in their scores as they move on to later DPs.

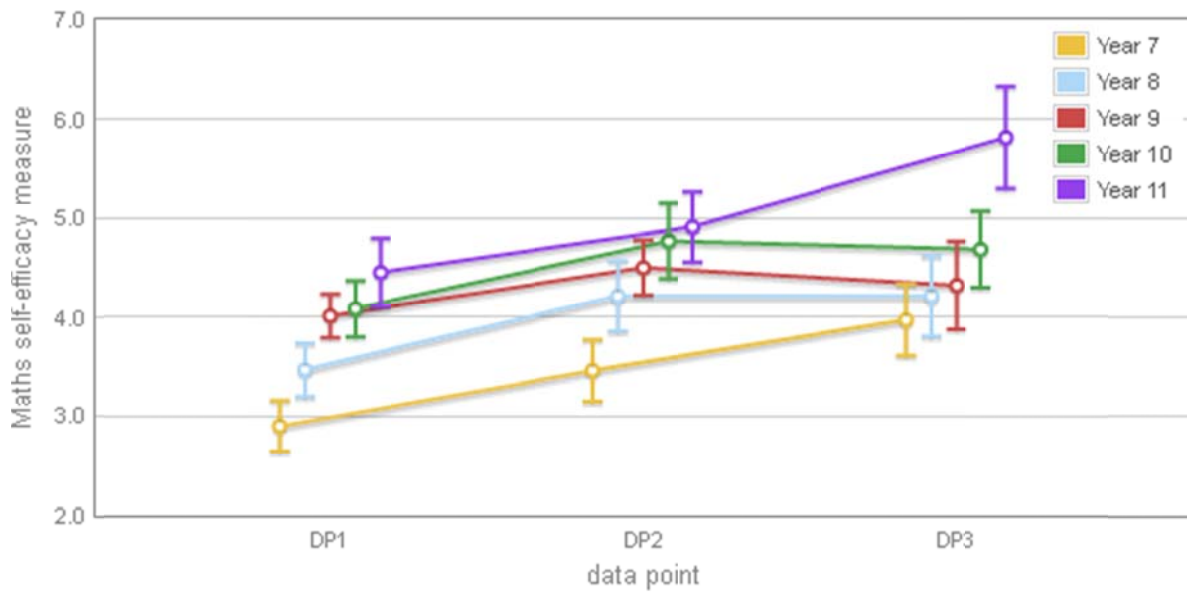


Figure 25 - Mean self-efficacy measure

Finally Figures 26 and 27 show the means of students' scores on perceived teaching practices, by Year group and for each data point.

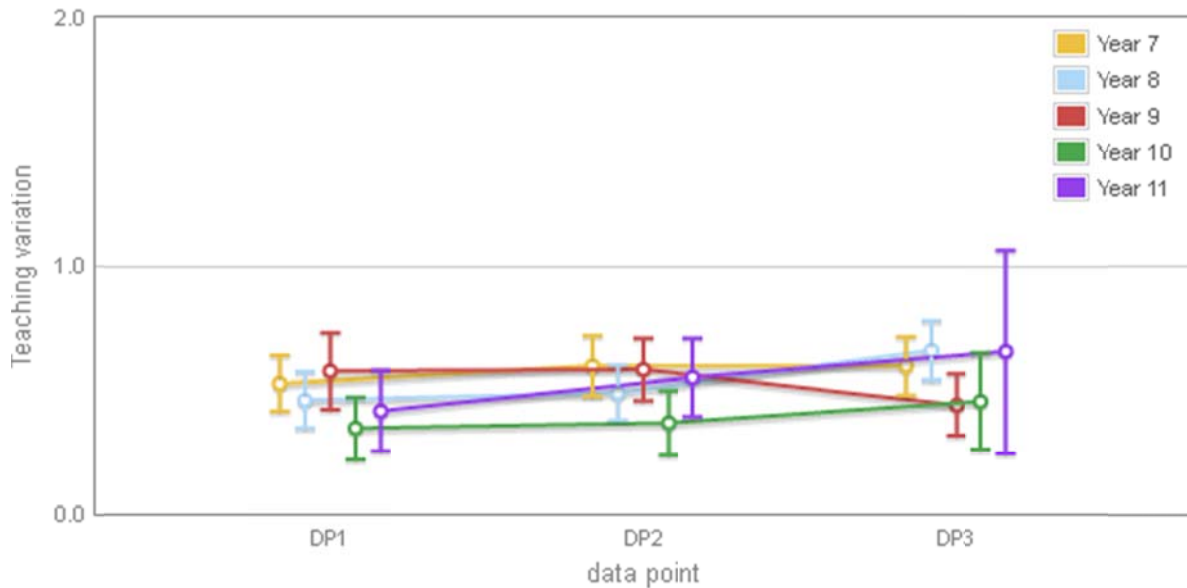


Figure 26 - Mean teaching variation measure

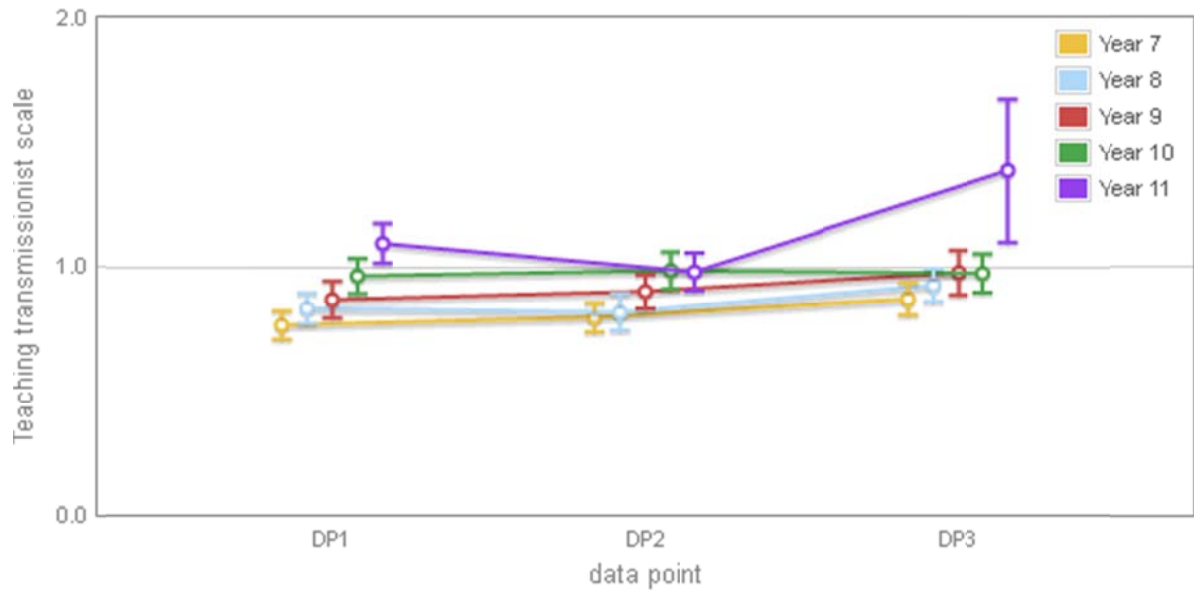


Figure 27 - Mean teaching transmissionist measure

Your school results by cohort - Year 7

In this section we focus on the results of Year 7 cohort. This includes only the students who were at Year 7 during the academic year 2011-2012 and continue filling in the questionnaires at DP2 (end of academic year 2011-2012) and at DP3 (start of academic year 2012-2013, when students moved to Year 8). Year 7 students enrolled at the study at the start of academic year 2012-2013 in some schools are excluded from this analysis.

Some selective outputs are compared by gender and where possible some findings are compared to the overall Year 7 sample.

A total of 146 students from Year 7 took part in this study from your school. Of these, 61 (approximately 42%) are boys and 85 (58%) are girls. Students' ratings of their ability in the main subjects, during the three DPs of the project are shown in the next 3 tables.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	0 (0.0%)	4 (4.7%)	2 (3.3%)	0 (0.0%)	0 (0.0%)	4 (4.7%)
Average	7 (11.5%)	20 (23.5%)	8 (13.1%)	29 (32.2%)	7 (11.7%)	26 (30.6%)
Good	36 (59.0%)	39 (45.9%)	34 (55.7%)	42 (46.7%)	35 (58.3%)	36 (42.4%)
Excellent	17 (27.9%)	22 (25.9%)	17 (27.9%)	16 (17.8%)	18 (30.0%)	19 (22.4%)
Missing	1 (1.6%)	0 (0.0%)	0 (0.0%)	3 (3.3%)	0 (0.0%)	0 (0.0%)
Totals	61 (100%)	85 (100%)	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 8 - Self-reported ability in Mathematics by DP and gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	1 (1.6%)	2 (2.4%)	1 (1.6%)	0 (0.0%)	2 (3.3%)	1 (1.2%)
Average	18 (29.5%)	20 (23.5%)	11 (18.0%)	18 (20.0%)	14 (23.3%)	13 (15.3%)
Good	24 (39.3%)	50 (58.8%)	35 (57.4%)	52 (57.8%)	32 (53.3%)	58 (68.2%)
Excellent	17 (27.9%)	13 (15.3%)	14 (23.0%)	19 (21.1%)	12 (20.0%)	13 (15.3%)
Missing	1 (1.6%)	0 (0.0%)	0 (0.0%)	1 (1.1%)	0 (0.0%)	0 (0.0%)
Totals	61 (100%)	85 (100%)	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 9 - Self-reported ability in English by DP and gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	1 (1.6%)	5 (5.9%)	2 (3.3%)	4 (4.4%)	2 (3.3%)	6 (7.1%)
Average	16 (26.2%)	22 (25.9%)	13 (21.3%)	18 (20.0%)	9 (15.0%)	24 (28.2%)
Good	32 (52.5%)	42 (49.4%)	24 (39.3%)	52 (57.8%)	29 (48.3%)	39 (45.9%)
Excellent	12 (19.7%)	16 (18.8%)	22 (36.1%)	14 (15.6%)	20 (33.3%)	16 (18.8%)
Missing	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (2.2%)	0 (0.0%)	0 (0.0%)
Totals	61 (100%)	85 (100%)	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 10 - Self-reported ability in Science by DP and gender

We also asked the students at DP2 and DP3 to report how they think their ability changed from either the start of the year (at DP2) or from last year (at DP3). Their responses are shown in the next tables, by subject.

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	0 (0.0%)	3 (3.3%)	4 (6.7%)	2 (2.4%)
I am the same	11 (18.0%)	10 (11.1%)	13 (21.7%)	25 (29.4%)
I am better now	50 (82.0%)	77 (85.6%)	43 (71.7%)	58 (68.2%)
Missing	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Totals	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 11 - Self-reported change in ability over the last year for Mathematics by gender

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	0 (0.0%)	1 (1.1%)	1 (1.7%)	3 (3.5%)
I am the same	16 (26.2%)	20 (22.2%)	18 (30.0%)	20 (23.5%)
I am better now	45 (73.8%)	69 (76.7%)	40 (66.7%)	62 (72.9%)
Missing	0 (0.0%)	0 (0.0%)	1 (1.7%)	0 (0.0%)
Totals	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 12 - Self-reported change in ability over the last year for English by gender

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	2 (3.3%)	3 (3.3%)	1 (1.7%)	5 (5.9%)
I am the same	11 (18.0%)	19 (21.1%)	16 (26.7%)	29 (34.1%)
I am better now	48 (78.7%)	68 (75.6%)	43 (71.7%)	51 (60.0%)
Missing	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Totals	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 13 - Self-reported change in ability over the last year for Science by gender

Students were also asked to rate the difficulty of their maths lessons in general. Their responses to this question are shown in the next table.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Too easy	6 (9.8%)	8 (9.4%)	6 (9.8%)	6 (6.7%)	7 (11.7%)	5 (5.9%)
About right	52 (85.2%)	71 (83.5%)	45 (73.8%)	73 (81.1%)	47 (78.3%)	69 (81.2%)
Too hard	1 (1.6%)	4 (4.7%)	4 (6.6%)	7 (7.8%)	2 (3.3%)	8 (9.4%)
Missing	2 (3.3%)	2 (2.4%)	6 (9.8%)	4 (4.4%)	4 (6.7%)	3 (3.5%)
Totals	61 (100%)	85 (100%)	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 14 - How do these students find their maths lessons in general

Future aspirations and parental support

Students were asked various questions about their future plans. The next tables show how boys and girls of Year 7 responded to the question about their preferred options after Year 11, at DP1.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	15 (24.6%)	28 (32.9%)	16 (26.2%)	24 (26.7%)	20 (33.3%)	32 (37.6%)
Study FT at college	10 (16.4%)	16 (18.8%)	10 (16.4%)	19 (21.1%)	9 (15.0%)	11 (12.9%)
Study PT at college & work	10 (16.4%)	22 (25.9%)	18 (29.5%)	26 (28.9%)	13 (21.7%)	26 (30.6%)
Take an apprenticeship	4 (6.6%)	7 (8.2%)	4 (6.6%)	9 (10.0%)	4 (6.7%)	7 (8.2%)
Work in the family business	3 (4.9%)	0 (0.0%)	1 (1.6%)	0 (0.0%)	3 (5.0%)	1 (1.2%)
Work in a full-time job	7 (11.5%)	5 (5.9%)	6 (9.8%)	7 (7.8%)	5 (8.3%)	2 (2.4%)
Work in a part-time job	3 (4.9%)	5 (5.9%)	0 (0.0%)	3 (3.3%)	2 (3.3%)	3 (3.5%)
Other	7 (11.5%)	2 (2.4%)	4 (6.6%)	2 (2.2%)	3 (5.0%)	3 (3.5%)
Missing	2 (3.3%)	0 (0.0%)	2 (3.3%)	0 (0.0%)	1 (1.7%)	0 (0.0%)
Totals	61 (100%)	85 (100%)	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 15 - What Year 7 students reported as their first choice to do when they finish Year 11, by gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	7 (11.5%)	6 (7.1%)	3 (4.9%)	6 (6.7%)	5 (8.3%)	3 (3.5%)
Study FT at college	12 (19.7%)	21 (24.7%)	13 (21.3%)	21 (23.3%)	14 (23.3%)	29 (34.1%)
Study PT at college & work	16 (26.2%)	23 (27.1%)	13 (21.3%)	18 (20.0%)	15 (25.0%)	16 (18.8%)
Take an apprenticeship	8 (13.1%)	9 (10.6%)	5 (8.2%)	17 (18.9%)	9 (15.0%)	18 (21.2%)
Work in the family business	2 (3.3%)	2 (2.4%)	2 (3.3%)	2 (2.2%)	3 (5.0%)	3 (3.5%)
Work in a full-time job	7 (11.5%)	8 (9.4%)	12 (19.7%)	9 (10.0%)	5 (8.3%)	6 (7.1%)
Work in a part-time job	4 (6.6%)	13 (15.3%)	9 (14.8%)	13 (14.4%)	4 (6.7%)	8 (9.4%)
Other	3 (4.9%)	3 (3.5%)	2 (3.3%)	4 (4.4%)	2 (3.3%)	2 (2.4%)
Missing	2 (3.3%)	0 (0.0%)	2 (3.3%)	0 (0.0%)	3 (5.0%)	0 (0.0%)
Totals	61 (100%)	85 (100%)	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 16 - What Year 7 students reported as their second choice to do when they finish Year 11, by gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	22 (36.1%)	34 (40.0%)	19 (31.1%)	30 (33.3%)	25 (41.7%)	35 (41.2%)
Study FT at college	22 (36.1%)	37 (43.5%)	23 (37.7%)	40 (44.4%)	23 (38.3%)	40 (47.1%)
Study PT at college & work	26 (42.6%)	45 (52.9%)	31 (50.8%)	44 (48.9%)	28 (46.7%)	42 (49.4%)
Take an apprenticeship	12 (19.7%)	16 (18.8%)	9 (14.8%)	26 (28.9%)	13 (21.7%)	25 (29.4%)
Work in the family business	5 (8.2%)	2 (2.4%)	3 (4.9%)	2 (2.2%)	6 (10.0%)	4 (4.7%)
Work in a full-time job	13 (21.3%)	13 (15.3%)	18 (29.5%)	16 (17.8%)	10 (16.7%)	8 (9.4%)
Work in a part-time job	7 (11.5%)	18 (21.2%)	9 (14.8%)	16 (17.8%)	6 (10.0%)	11 (12.9%)
Other	10 (16.4%)	5 (5.9%)	6 (9.8%)	6 (6.7%)	5 (8.3%)	4 (4.7%)
Missing	2 (3.3%)	0 (0.0%)	2 (3.3%)	0 (0.0%)	3 (5.0%)	0 (0.0%)
Totals	61 (100%)	85 (100%)	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 17 - What Year 7 students reported as either first or second choice to do when they finish Year 11, by gender

The next table shows students' comparative confidence in achieving their first choice from above.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Not at all confident	4 (6.6%)	4 (4.7%)	2 (3.3%)	6 (6.7%)	1 (1.7%)	2 (2.4%)
Somewhat confident	28 (45.9%)	46 (54.1%)	31 (50.8%)	49 (54.4%)	34 (56.7%)	51 (60.0%)
Very confident	26 (42.6%)	35 (41.2%)	24 (39.3%)	34 (37.8%)	24 (40.0%)	32 (37.6%)
Missing	3 (4.9%)	0 (0.0%)	4 (6.6%)	1 (1.1%)	1 (1.7%)	0 (0.0%)
Totals	61 (100%)	85 (100%)	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 18 - How confident Year 7 students are that they will be able to get their first choice

At DP1, as well as later on, students were also asked about the reasons that might stop them from continuing their education after Year 11.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Low GCSE grades	33 (54.1%)	53 (62.4%)	41 (67.2%)	60 (66.7%)	31 (51.7%)	60 (70.6%)
Parents	6 (9.8%)	7 (8.2%)	7 (11.5%)	5 (5.6%)	6 (10.0%)	4 (4.7%)
Friends	10 (16.4%)	5 (5.9%)	6 (9.8%)	10 (11.1%)	12 (20.0%)	9 (10.6%)
Other relatives	3 (4.9%)	8 (9.4%)	2 (3.3%)	8 (8.9%)	4 (6.7%)	4 (4.7%)
Leaving friends and family	23 (37.7%)	22 (25.9%)	18 (29.5%)	27 (30.0%)	14 (23.3%)	34 (40.0%)
Uninterested in studying	6 (9.8%)	4 (4.7%)	2 (3.3%)	6 (6.7%)	7 (11.7%)	3 (3.5%)
Care responsibilities	15 (24.6%)	26 (30.6%)	11 (18.0%)	20 (22.2%)	17 (28.3%)	19 (22.4%)
Don't know what to do	9 (14.8%)	25 (29.4%)	9 (14.8%)	28 (31.1%)	12 (20.0%)	27 (31.8%)
Full-time job	19 (31.1%)	20 (23.5%)	12 (19.7%)	22 (24.4%)	14 (23.3%)	21 (24.7%)
Don't like school	9 (14.8%)	6 (7.1%)	8 (13.1%)	6 (6.7%)	12 (20.0%)	10 (11.8%)
School not important	0 (0.0%)	3 (3.5%)	1 (1.6%)	4 (4.4%)	6 (10.0%)	1 (1.2%)
Not enough money	15 (24.6%)	19 (22.4%)	7 (11.5%)	21 (23.3%)	11 (18.3%)	19 (22.4%)
None of the above	8 (13.1%)	11 (12.9%)	11 (18.0%)	13 (14.4%)	6 (10.0%)	10 (11.8%)
Totals	61 (100%)	85 (100%)	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 19 - What might stop them from continuing their education after Year 11

Table 20 presents the distribution of Year 7 students' responses about people who may influence their decisions for the future. When interpreting the percentages please note that students had to select one answer per row (Yes, Maybe, No), and here we report the frequencies of those reported Yes or Maybe. Thus the percentage is calculated over the totals in each column.

	DP1	DP2	DP3
My friends	38 (26.0%)	31 (20.5%)	43 (29.7%)
My parents	122 (83.6%)	113 (74.8%)	126 (86.9%)
Teachers	55 (37.7%)	58 (38.4%)	52 (35.9%)
My brothers or sisters	42 (28.8%)	45 (29.8%)	55 (37.9%)
My cousins	25 (17.1%)	24 (15.9%)	32 (22.1%)
Other relatives*	65 (44.5%)	60 (39.7%)	56 (38.6%)
Counsellors at school	14 (9.6%)	9 (6.0%)	10 (6.9%)
Other	14 (9.6%)	6 (4.0%)	8 (5.5%)
Totals	146 (100%)	151 (100%)	145 (100%)

Table 20 - People who will influence or inspire their decisions about what they want to do after secondary school

The next two tables present students' responses to the question of whether they plan to go to university and the people they know who have been to university. The responses in the first table are presented by gender group whereas the latter presents aggregated responses.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Yes	34 (55.7%)	50 (58.8%)	29 (47.5%)	55 (61.1%)	37 (61.7%)	48 (56.5%)
No	7 (11.5%)	3 (3.5%)	6 (9.8%)	2 (2.2%)	4 (6.7%)	5 (5.9%)
I don't know	18 (29.5%)	30 (35.3%)	23 (37.7%)	28 (31.1%)	18 (30.0%)	30 (35.3%)
Missing	2 (3.3%)	2 (2.4%)	3 (4.9%)	5 (5.6%)	1 (1.7%)	2 (2.4%)
Totals	61 (100%)	85 (100%)	61 (100%)	90 (100%)	60 (100%)	85 (100%)

Table 21 - Intention to go to university

	DP1	DP2	DP3
My parents/carers	63 (43.2%)	69 (45.7%)	66 (45.5%)
My brothers or sisters	10 (6.8%)	10 (6.6%)	15 (10.3%)
My friends	19 (13.0%)	21 (13.9%)	20 (13.8%)
My cousins	34 (23.3%)	33 (21.9%)	38 (26.2%)
Other relatives*	54 (37.0%)	66 (43.7%)	61 (42.1%)
Other	10 (6.8%)	3 (2.0%)	6 (4.1%)
Totals	146 (100%)	151 (100%)	145 (100%)

Table 22 - People they know who have been to university (*aunts, uncles, grandparents)

Figure 28 shows how the mean perceived parental support of the students in your school compares to the overall Year 7 mean, per data collection point.

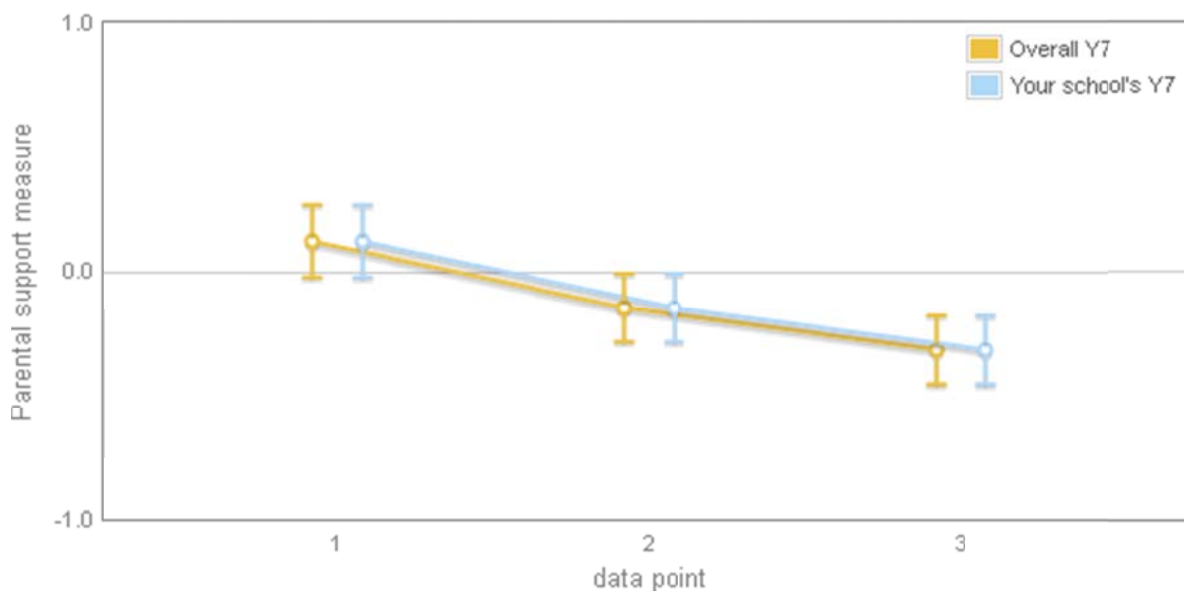


Figure 28 - Mean parental support score of your Year 7 students compared to the overall sample, by DP

Attitudes to mathematics

In the next three figures we present the mean scores of your Year 7 students in the three attitudinal measures we presented earlier (maths disposition, maths identity, maths self-efficacy), by data point and compared to the overall mean scores of Year 7 students in our sample.

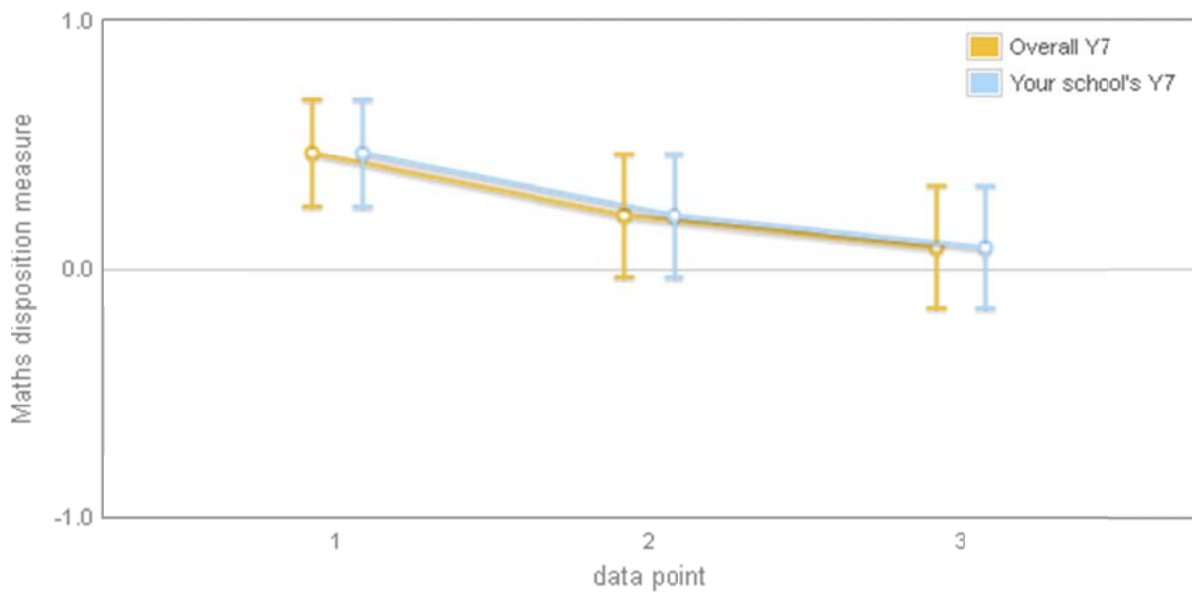


Figure 29 - Mean maths disposition score of your Year 7 students compared to the overall sample, by DP

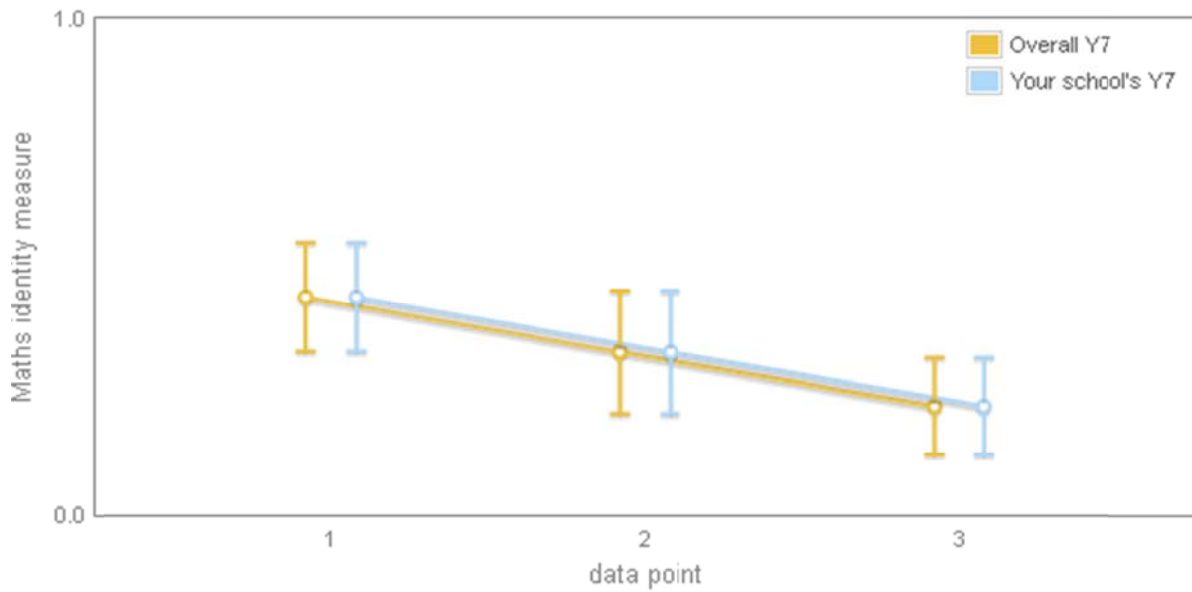


Figure 30 - Mean maths identity score of your Year 7 students compared to the overall sample, by DP

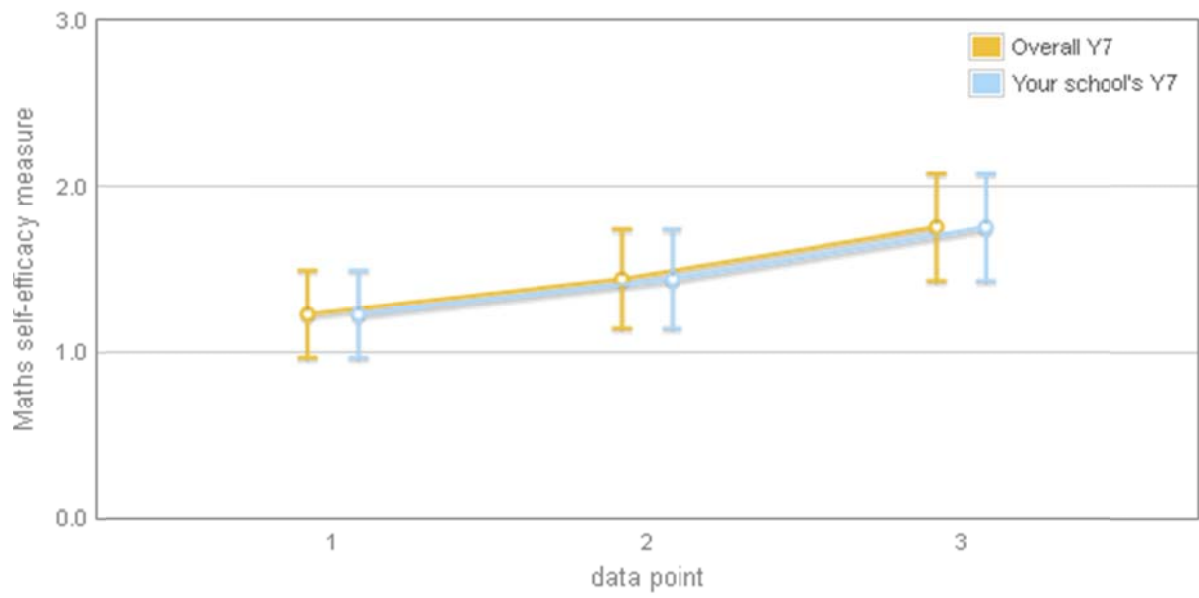


Figure 31 - Mean maths self-efficacy score of your Year 7 students compared to the overall sample, by DP

Your school results by cohort - Year 8

In this section we focus on the results of Year 8 cohort. This includes only the students who were at Year 8 during the academic year 2011-2012 and continue filling in the questionnaires at DP2 (end of academic year 2011-2012) and at DP3 (start of academic year 2012-2013, when students moved to Year 9). Year 8 students enrolled at the study at the start of academic year 2012-2013 in some schools are excluded from this analysis.

Some selective outputs are compared by gender and where possible some findings are compared to the overall Year 8 sample.

A total of 148 students from Year 8 took part in this study from your school. Of these, 43 (approximately 29%) are boys and 105 (71%) are girls. Students' ratings of their ability in the main subjects, during the three DPs of the project are shown in the next 3 tables.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	0 (0.0%)	7 (6.7%)	1 (2.2%)	5 (4.8%)	1 (2.2%)	6 (5.8%)
Average	15 (34.9%)	33 (31.4%)	16 (34.8%)	27 (26.0%)	10 (21.7%)	19 (18.4%)
Good	18 (41.9%)	40 (38.1%)	19 (41.3%)	49 (47.1%)	24 (52.2%)	58 (56.3%)
Excellent	10 (23.3%)	24 (22.9%)	10 (21.7%)	23 (22.1%)	11 (23.9%)	19 (18.4%)
Missing	0 (0.0%)	1 (1.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.0%)
Totals	43 (100%)	105 (100%)	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 23 - Self-reported ability in Mathematics by DP and gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	0 (0.0%)	2 (1.9%)	0 (0.0%)	2 (1.9%)	1 (2.2%)	3 (2.9%)
Average	12 (27.9%)	28 (26.7%)	13 (28.3%)	18 (17.3%)	13 (28.3%)	23 (22.3%)
Good	27 (62.8%)	48 (45.7%)	26 (56.5%)	59 (56.7%)	26 (56.5%)	56 (54.4%)
Excellent	4 (9.3%)	26 (24.8%)	7 (15.2%)	24 (23.1%)	5 (10.9%)	20 (19.4%)
Missing	0 (0.0%)	1 (1.0%)	0 (0.0%)	1 (1.0%)	1 (2.2%)	1 (1.0%)
Totals	43 (100%)	105 (100%)	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 24 - Self-reported ability in English by DP and gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	2 (4.7%)	5 (4.8%)	3 (6.5%)	5 (4.8%)	3 (6.5%)	3 (2.9%)
Average	9 (20.9%)	34 (32.4%)	9 (19.6%)	31 (29.8%)	12 (26.1%)	34 (33.0%)
Good	23 (53.5%)	50 (47.6%)	21 (45.7%)	54 (51.9%)	15 (32.6%)	48 (46.6%)
Excellent	9 (20.9%)	15 (14.3%)	13 (28.3%)	14 (13.5%)	15 (32.6%)	17 (16.5%)
Missing	0 (0.0%)	1 (1.0%)	0 (0.0%)	0 (0.0%)	1 (2.2%)	1 (1.0%)
Totals	43 (100%)	105 (100%)	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 25 - Self-reported ability in Science by DP and gender

We also asked the students at DP2 and DP3 to report how they think their ability changed from either the start of the year (at DP2) or from last year (at DP3). Their responses are shown in the next tables, by subject.

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	4 (8.7%)	7 (6.7%)	2 (4.3%)	6 (5.8%)
I am the same	15 (32.6%)	22 (21.2%)	7 (15.2%)	27 (26.2%)
I am better now	26 (56.5%)	75 (72.1%)	37 (80.4%)	70 (68.0%)
Missing	1 (2.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Totals	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 26 - Self-reported change in ability over the last year for Mathematics by gender

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	2 (4.3%)	5 (4.8%)	3 (6.5%)	5 (4.9%)
I am the same	13 (28.3%)	34 (32.7%)	15 (32.6%)	35 (34.0%)
I am better now	30 (65.2%)	64 (61.5%)	27 (58.7%)	63 (61.2%)
Missing	1 (2.2%)	1 (1.0%)	1 (2.2%)	0 (0.0%)
Totals	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 27 - Self-reported change in ability over the last year for English by gender

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	2 (4.3%)	8 (7.7%)	2 (4.3%)	4 (3.9%)
I am the same	6 (13.0%)	34 (32.7%)	10 (21.7%)	37 (35.9%)
I am better now	36 (78.3%)	62 (59.6%)	31 (67.4%)	61 (59.2%)
Missing	2 (4.3%)	0 (0.0%)	3 (6.5%)	1 (1.0%)
Totals	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 28 - Self-reported change in ability over the last year for Science by gender

Students were also asked to rate the difficulty of their maths lessons in general. Their responses to this question are shown in the next table.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Too easy	4 (9.3%)	12 (11.4%)	2 (4.3%)	5 (4.8%)	2 (4.3%)	7 (6.8%)
About right	38 (88.4%)	77 (73.3%)	33 (71.7%)	85 (81.7%)	36 (78.3%)	78 (75.7%)
Too hard	0 (0.0%)	16 (15.2%)	8 (17.4%)	10 (9.6%)	3 (6.5%)	15 (14.6%)
Missing	1 (2.3%)	0 (0.0%)	3 (6.5%)	4 (3.8%)	5 (10.9%)	3 (2.9%)
Totals	43 (100%)	105 (100%)	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 29 - How do these students find their maths lessons in general

Future aspirations and parental support

Students were asked various questions about their future plans. The next tables show how boys and girls of Year 8 responded to the question about their preferred options after Year 11, at DP1.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	12 (27.9%)	32 (30.5%)	13 (28.3%)	38 (36.5%)	19 (41.3%)	40 (38.8%)
Study FT at college	7 (16.3%)	22 (21.0%)	12 (26.1%)	30 (28.8%)	13 (28.3%)	28 (27.2%)
Study PT at college & work	8 (18.6%)	24 (22.9%)	7 (15.2%)	21 (20.2%)	7 (15.2%)	20 (19.4%)
Take an apprenticeship	5 (11.6%)	14 (13.3%)	5 (10.9%)	4 (3.8%)	3 (6.5%)	3 (2.9%)
Work in the family business	1 (2.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Work in a full-time job	6 (14.0%)	5 (4.8%)	4 (8.7%)	4 (3.8%)	3 (6.5%)	4 (3.9%)
Work in a part-time job	1 (2.3%)	0 (0.0%)	1 (2.2%)	1 (1.0%)	0 (0.0%)	1 (1.0%)
Other	2 (4.7%)	7 (6.7%)	3 (6.5%)	3 (2.9%)	1 (2.2%)	5 (4.9%)
Missing	1 (2.3%)	1 (1.0%)	1 (2.2%)	3 (2.9%)	0 (0.0%)	2 (1.9%)
Totals	43 (100%)	105 (100%)	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 30 - What Year 8 students reported as their first choice to do when they finish Year 11, by gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	0 (0.0%)	5 (4.8%)	3 (6.5%)	11 (10.6%)	3 (6.5%)	7 (6.8%)
Study FT at college	6 (14.0%)	25 (23.8%)	11 (23.9%)	19 (18.3%)	13 (28.3%)	33 (32.0%)
Study PT at college & work	12 (27.9%)	33 (31.4%)	10 (21.7%)	40 (38.5%)	8 (17.4%)	33 (32.0%)
Take an apprenticeship	9 (20.9%)	13 (12.4%)	5 (10.9%)	15 (14.4%)	14 (30.4%)	11 (10.7%)
Work in the family business	1 (2.3%)	2 (1.9%)	2 (4.3%)	2 (1.9%)	0 (0.0%)	1 (1.0%)
Work in a full-time job	9 (20.9%)	11 (10.5%)	8 (17.4%)	6 (5.8%)	1 (2.2%)	3 (2.9%)
Work in a part-time job	1 (2.3%)	9 (8.6%)	5 (10.9%)	6 (5.8%)	4 (8.7%)	11 (10.7%)
Other	2 (4.7%)	5 (4.8%)	0 (0.0%)	2 (1.9%)	3 (6.5%)	1 (1.0%)
Missing	3 (7.0%)	2 (1.9%)	2 (4.3%)	3 (2.9%)	0 (0.0%)	3 (2.9%)
Totals	43 (100%)	105 (100%)	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 31 - What Year 8 students reported as their second choice to do when they finish Year 11, by gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	12 (27.9%)	37 (35.2%)	16 (34.8%)	49 (47.1%)	22 (47.8%)	47 (45.6%)
Study FT at college	13 (30.2%)	47 (44.8%)	23 (50.0%)	49 (47.1%)	26 (56.5%)	61 (59.2%)
Study PT at college & work	20 (46.5%)	57 (54.3%)	17 (37.0%)	61 (58.7%)	15 (32.6%)	53 (51.5%)
Take an apprenticeship	14 (32.6%)	27 (25.7%)	10 (21.7%)	19 (18.3%)	17 (37.0%)	14 (13.6%)
Work in the family business	2 (4.7%)	2 (1.9%)	2 (4.3%)	2 (1.9%)	0 (0.0%)	1 (1.0%)
Work in a full-time job	15 (34.9%)	16 (15.2%)	12 (26.1%)	10 (9.6%)	4 (8.7%)	7 (6.8%)
Work in a part-time job	2 (4.7%)	9 (8.6%)	6 (13.0%)	7 (6.7%)	4 (8.7%)	12 (11.7%)
Other	4 (9.3%)	12 (11.4%)	3 (6.5%)	5 (4.8%)	4 (8.7%)	5 (4.9%)
Missing	3 (7.0%)	2 (1.9%)	2 (4.3%)	3 (2.9%)	0 (0.0%)	4 (3.9%)
Totals	43 (100%)	105 (100%)	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 32 - What Year 8 students reported as either first or second choice to do when they finish Year 11, by gender

The next table shows students' comparative confidence in achieving their first choice from above.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Not at all confident	0 (0.0%)	3 (2.9%)	0 (0.0%)	4 (3.8%)	0 (0.0%)	5 (4.9%)
Somewhat confident	23 (53.5%)	76 (72.4%)	24 (52.2%)	64 (61.5%)	27 (58.7%)	62 (60.2%)
Very confident	20 (46.5%)	26 (24.8%)	20 (43.5%)	33 (31.7%)	19 (41.3%)	36 (35.0%)
Missing	0 (0.0%)	0 (0.0%)	2 (4.3%)	3 (2.9%)	0 (0.0%)	0 (0.0%)
Totals	43 (100%)	105 (100%)	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 33 - How confident Year 8 students are that they will be able to get their first choice

At DP1, as well as later on, students were also asked about the reasons that might stop them from continuing their education after Year 11.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Low GCSE grades	25 (58.1%)	65 (61.9%)	25 (54.3%)	73 (70.2%)	30 (65.2%)	79 (76.7%)
Parents	2 (4.7%)	6 (5.7%)	4 (8.7%)	8 (7.7%)	1 (2.2%)	6 (5.8%)
Friends	7 (16.3%)	13 (12.4%)	10 (21.7%)	14 (13.5%)	6 (13.0%)	11 (10.7%)
Other relatives	3 (7.0%)	1 (1.0%)	3 (6.5%)	4 (3.8%)	1 (2.2%)	2 (1.9%)
Leaving friends and family	15 (34.9%)	19 (18.1%)	7 (15.2%)	20 (19.2%)	12 (26.1%)	14 (13.6%)
Uninterested in studying	3 (7.0%)	7 (6.7%)	7 (15.2%)	3 (2.9%)	6 (13.0%)	8 (7.8%)
Care responsibilities	9 (20.9%)	20 (19.0%)	5 (10.9%)	22 (21.2%)	9 (19.6%)	13 (12.6%)
Don't know what to do	5 (11.6%)	30 (28.6%)	13 (28.3%)	32 (30.8%)	13 (28.3%)	33 (32.0%)
Full-time job	7 (16.3%)	23 (21.9%)	13 (28.3%)	18 (17.3%)	13 (28.3%)	22 (21.4%)
Don't like school	8 (18.6%)	7 (6.7%)	11 (23.9%)	9 (8.7%)	10 (21.7%)	11 (10.7%)
School not important	2 (4.7%)	1 (1.0%)	3 (6.5%)	0 (0.0%)	4 (8.7%)	1 (1.0%)
Not enough money	13 (30.2%)	27 (25.7%)	10 (21.7%)	28 (26.9%)	9 (19.6%)	31 (30.1%)
None of the above	8 (18.6%)	13 (12.4%)	8 (17.4%)	10 (9.6%)	6 (13.0%)	11 (10.7%)
Totals	43 (100%)	105 (100%)	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 34 - What might stop them from continuing their education after Year 11

Table 35 presents the distribution of Year 8 students' responses about people who may influence their decisions for the future. When interpreting the percentages please note that students had to select one answer per row (Yes, Maybe, No), and here we report the frequencies of those reported Yes or Maybe. Thus the percentage is calculated over the totals in each column.

	DP1	DP2	DP3
My friends	50 (33.8%)	51 (34.0%)	47 (31.5%)
My parents	125 (84.5%)	120 (80.0%)	107 (71.8%)
Teachers	55 (37.2%)	57 (38.0%)	66 (44.3%)
My brothers or sisters	49 (33.1%)	48 (32.0%)	53 (35.6%)
My cousins	29 (19.6%)	32 (21.3%)	31 (20.8%)
Other relatives*	64 (43.2%)	57 (38.0%)	59 (39.6%)
Counsellors at school	19 (12.8%)	13 (8.7%)	19 (12.8%)
Other	13 (8.8%)	6 (4.0%)	8 (5.4%)
Totals	148 (100%)	150 (100%)	149 (100%)

Table 35 - People who will influence or inspire their decisions about what they want to do after secondary school

The next two tables present students' responses to the question of whether they plan to go to university and the people they know who have been to university. The responses in the first table are presented by gender group whereas the latter presents aggregated responses.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Yes	27 (62.8%)	76 (72.4%)	25 (54.3%)	64 (61.5%)	26 (56.5%)	62 (60.2%)
No	6 (14.0%)	1 (1.0%)	3 (6.5%)	5 (4.8%)	5 (10.9%)	6 (5.8%)
I don't know	9 (20.9%)	27 (25.7%)	16 (34.8%)	30 (28.8%)	13 (28.3%)	31 (30.1%)
Missing	1 (2.3%)	1 (1.0%)	2 (4.3%)	5 (4.8%)	2 (4.3%)	4 (3.9%)
Totals	43 (100%)	105 (100%)	46 (100%)	104 (100%)	46 (100%)	103 (100%)

Table 36 - Intention to go to university

	DP1	DP2	DP3
My parents/carers	78 (52.7%)	80 (53.3%)	87 (58.4%)
My brothers or sisters	7 (4.7%)	13 (8.7%)	14 (9.4%)
My friends	22 (14.9%)	33 (22.0%)	32 (21.5%)
My cousins	42 (28.4%)	48 (32.0%)	53 (35.6%)
Other relatives*	72 (48.6%)	69 (46.0%)	77 (51.7%)
Other	8 (5.4%)	8 (5.3%)	10 (6.7%)
Totals	148 (100%)	150 (100%)	149 (100%)

Table 37 - People they know who have been to university (*aunts, uncles, grandparents)

Figure 32 shows how the mean perceived parental support of the students in your school compares to the overall Year 8 mean, per data collection point.

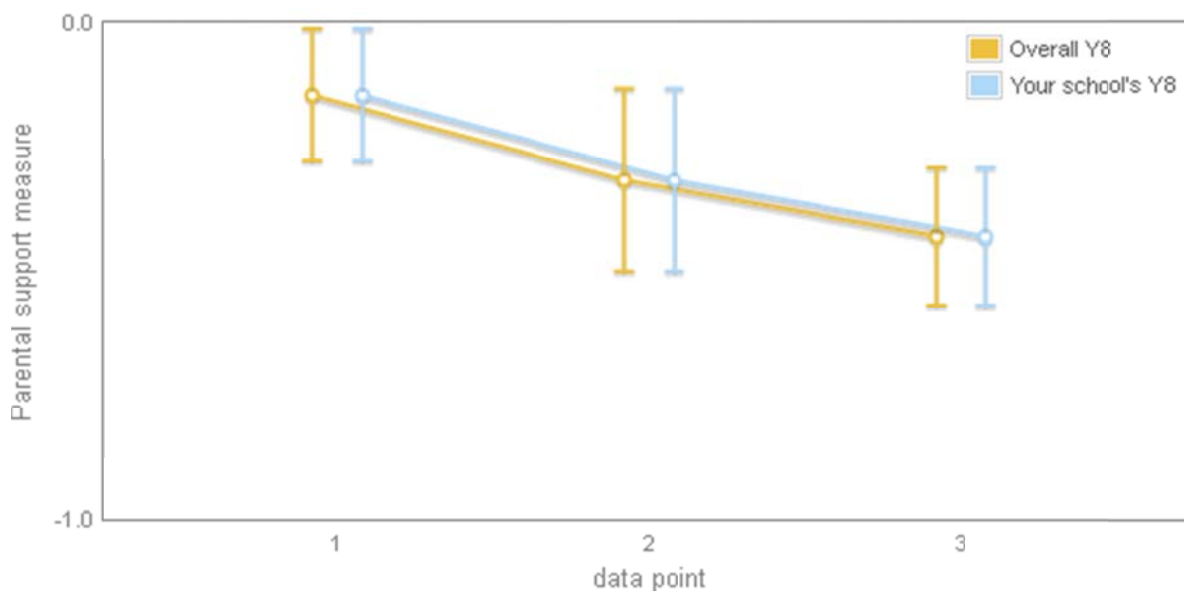


Figure 32 - Mean parental support score of your Year 8 students compared to the overall sample, by DP

Attitudes to mathematics

In the next three figures we present the mean scores of your Year 8 students in the three attitudinal measures we presented earlier (maths disposition, maths identity, maths self-efficacy), by data point and compared to the overall mean scores of Year 8 students in our sample.

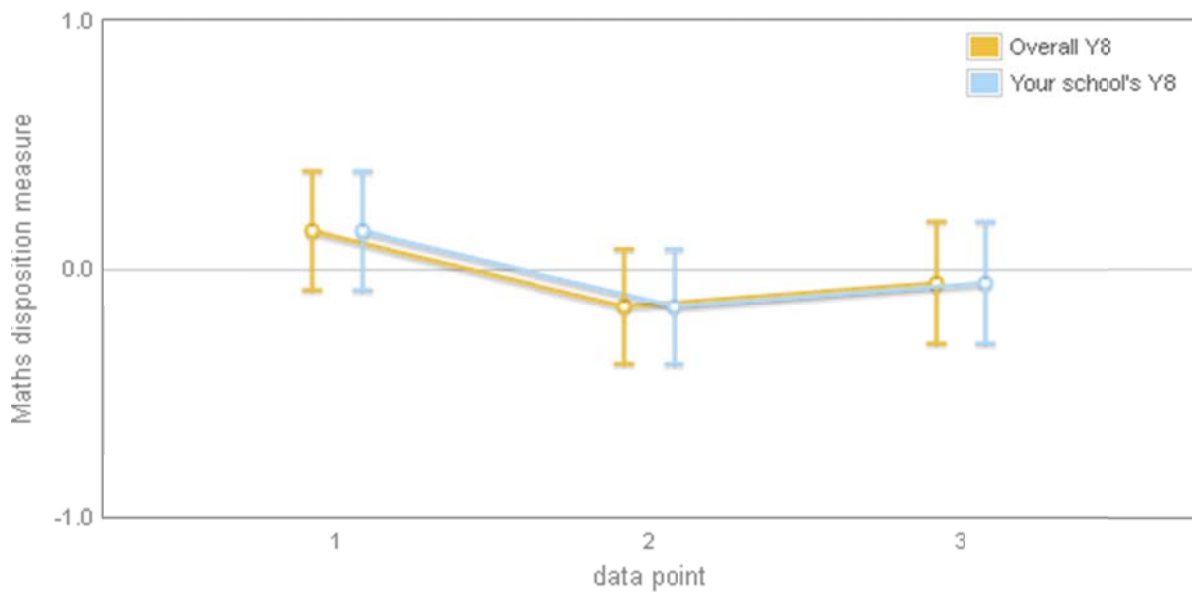


Figure 33 - Mean maths disposition score of your Year 8 students compared to the overall sample, by DP

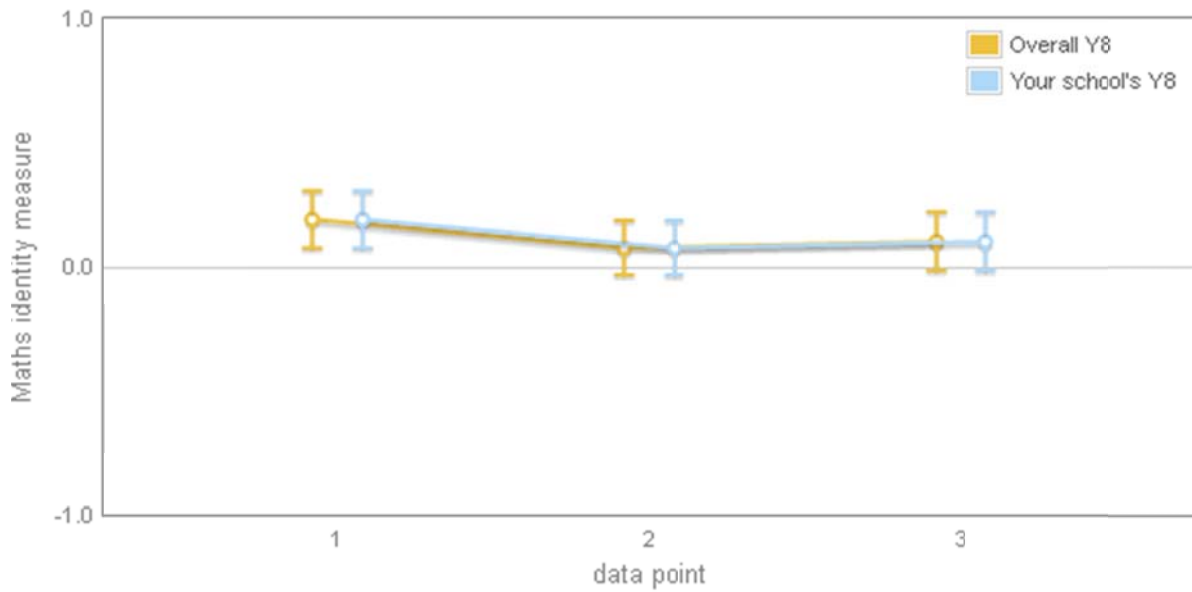


Figure 34 - Mean maths identity score of your Year 8 students compared to the overall sample, by DP

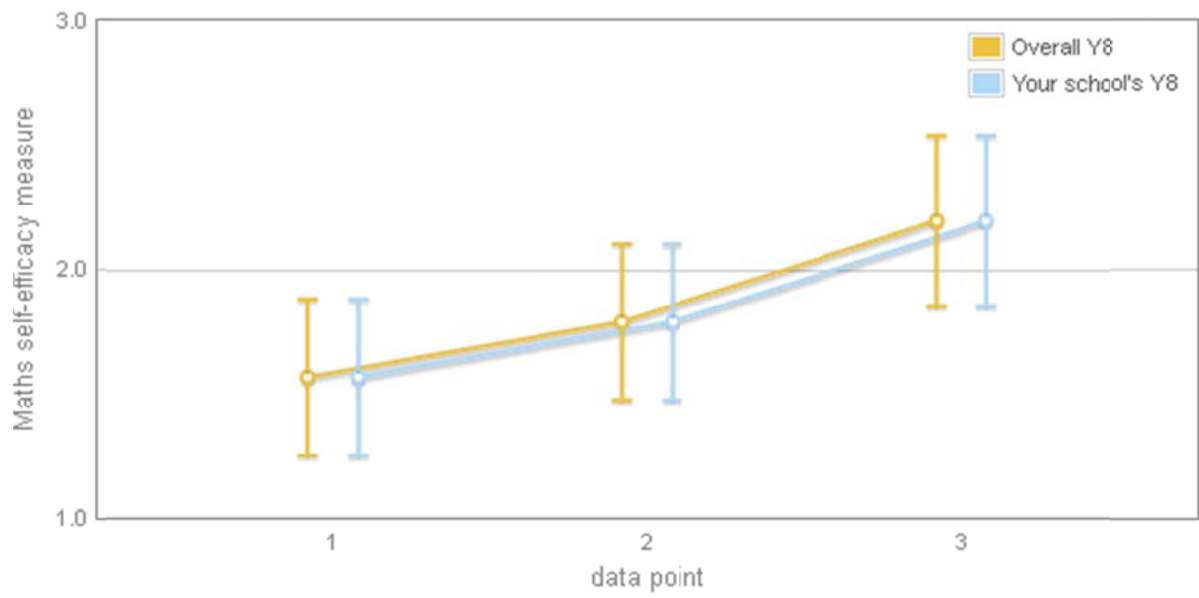


Figure 35 - Mean maths self-efficacy score of your Year 8 students compared to the overall sample, by DP

Your school results by cohort - Year 9

In this section we focus on the results of Year 9 cohort. This includes only the students who were at Year 9 during the academic year 2011-2012 and continue filling in the questionnaires at DP2 (end of academic year 2011-2012) and at DP3 (start of academic year 2012-2013, when students moved to Year 10). Year 9 students enrolled at the study at the start of academic year 2012-2013 in some schools are excluded from this analysis.

Some selective outputs are compared by gender and where possible some findings are compared to the overall Year 9 sample.

A total of 149 students from Year 9 took part in this study from your school. Of these, 65 (approximately 44%) are boys and 84 (56%) are girls. Students' ratings of their ability in the main subjects, during the three DPs of the project are shown in the next 3 tables.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	2 (3.1%)	5 (6.0%)	2 (2.9%)	2 (2.5%)	6 (9.0%)	4 (4.9%)
Average	18 (27.7%)	31 (36.9%)	17 (25.0%)	25 (30.9%)	17 (25.4%)	30 (37.0%)
Good	37 (56.9%)	44 (52.4%)	34 (50.0%)	50 (61.7%)	31 (46.3%)	41 (50.6%)
Excellent	8 (12.3%)	4 (4.8%)	15 (22.1%)	3 (3.7%)	13 (19.4%)	6 (7.4%)
Missing	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.2%)	0 (0.0%)	0 (0.0%)
Totals	65 (100%)	84 (100%)	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 38 - Self-reported ability in Mathematics by DP and gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	1 (1.5%)	4 (4.8%)	5 (7.4%)	0 (0.0%)	4 (6.0%)	7 (8.6%)
Average	25 (38.5%)	13 (15.5%)	20 (29.4%)	26 (32.1%)	23 (34.3%)	21 (25.9%)
Good	28 (43.1%)	59 (70.2%)	34 (50.0%)	40 (49.4%)	28 (41.8%)	41 (50.6%)
Excellent	11 (16.9%)	8 (9.5%)	9 (13.2%)	14 (17.3%)	10 (14.9%)	11 (13.6%)
Missing	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.2%)	2 (3.0%)	1 (1.2%)
Totals	65 (100%)	84 (100%)	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 39 - Self-reported ability in English by DP and gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	1 (1.5%)	1 (1.2%)	2 (2.9%)	7 (8.6%)	5 (7.5%)	10 (12.3%)
Average	13 (20.0%)	25 (29.8%)	14 (20.6%)	18 (22.2%)	15 (22.4%)	22 (27.2%)
Good	34 (52.3%)	52 (61.9%)	37 (54.4%)	49 (60.5%)	33 (49.3%)	43 (53.1%)
Excellent	16 (24.6%)	6 (7.1%)	15 (22.1%)	6 (7.4%)	13 (19.4%)	5 (6.2%)
Missing	1 (1.5%)	0 (0.0%)	0 (0.0%)	1 (1.2%)	1 (1.5%)	1 (1.2%)
Totals	65 (100%)	84 (100%)	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 40 - Self-reported ability in Science by DP and gender

We also asked the students at DP2 and DP3 to report how they think their ability changed from either the start of the year (at DP2) or from last year (at DP3). Their responses are shown in the next tables, by subject.

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	0 (0.0%)	5 (6.2%)	5 (7.5%)	6 (7.4%)
I am the same	13 (19.1%)	17 (21.0%)	16 (23.9%)	29 (35.8%)
I am better now	54 (79.4%)	59 (72.8%)	46 (68.7%)	46 (56.8%)
Missing	1 (1.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Totals	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 41 - Self-reported change in ability over the last year for Mathematics by gender

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	3 (4.4%)	6 (7.4%)	2 (3.0%)	5 (6.2%)
I am the same	17 (25.0%)	27 (33.3%)	20 (29.9%)	39 (48.1%)
I am better now	48 (70.6%)	48 (59.3%)	44 (65.7%)	36 (44.4%)
Missing	0 (0.0%)	0 (0.0%)	1 (1.5%)	1 (1.2%)
Totals	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 42 - Self-reported change in ability over the last year for English by gender

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	3 (4.4%)	3 (3.7%)	10 (14.9%)	10 (12.3%)
I am the same	21 (30.9%)	22 (27.2%)	20 (29.9%)	31 (38.3%)
I am better now	44 (64.7%)	56 (69.1%)	36 (53.7%)	39 (48.1%)
Missing	0 (0.0%)	0 (0.0%)	1 (1.5%)	1 (1.2%)
Totals	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 43 - Self-reported change in ability over the last year for Science by gender

Students were also asked to rate the difficulty of their maths lessons in general. Their responses to this question are shown in the next table.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Too easy	6 (9.2%)	3 (3.6%)	10 (14.7%)	6 (7.4%)	9 (13.4%)	3 (3.7%)
About right	49 (75.4%)	67 (79.8%)	49 (72.1%)	63 (77.8%)	45 (67.2%)	63 (77.8%)
Too hard	6 (9.2%)	12 (14.3%)	5 (7.4%)	10 (12.3%)	9 (13.4%)	15 (18.5%)
Missing	4 (6.2%)	2 (2.4%)	4 (5.9%)	2 (2.5%)	4 (6.0%)	0 (0.0%)
Totals	65 (100%)	84 (100%)	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 44 - How do these students find their maths lessons in general

Future aspirations and parental support

Students were asked various questions about their future plans. The next tables show how boys and girls of Year 9 responded to the question about their preferred options after Year 11, at DP1.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	22 (33.8%)	30 (35.7%)	25 (36.8%)	34 (42.0%)	25 (37.3%)	38 (46.9%)
Study FT at college	13 (20.0%)	24 (28.6%)	13 (19.1%)	25 (30.9%)	16 (23.9%)	25 (30.9%)
Study PT at college & work	14 (21.5%)	17 (20.2%)	13 (19.1%)	12 (14.8%)	10 (14.9%)	10 (12.3%)
Take an apprenticeship	3 (4.6%)	7 (8.3%)	2 (2.9%)	6 (7.4%)	7 (10.4%)	4 (4.9%)
Work in the family business	2 (3.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (3.0%)	0 (0.0%)
Work in a full-time job	5 (7.7%)	2 (2.4%)	7 (10.3%)	1 (1.2%)	3 (4.5%)	2 (2.5%)
Work in a part-time job	1 (1.5%)	0 (0.0%)	4 (5.9%)	1 (1.2%)	1 (1.5%)	1 (1.2%)
Other	3 (4.6%)	4 (4.8%)	4 (5.9%)	2 (2.5%)	2 (3.0%)	1 (1.2%)
Missing	2 (3.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.5%)	0 (0.0%)
Totals	65 (100%)	84 (100%)	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 45 - What Year 9 students reported as their first choice to do when they finish Year 11, by gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	2 (3.1%)	10 (11.9%)	6 (8.8%)	8 (9.9%)	5 (7.5%)	6 (7.4%)
Study FT at college	20 (30.8%)	21 (25.0%)	16 (23.5%)	24 (29.6%)	22 (32.8%)	29 (35.8%)
Study PT at college & work	13 (20.0%)	28 (33.3%)	18 (26.5%)	22 (27.2%)	14 (20.9%)	26 (32.1%)
Take an apprenticeship	13 (20.0%)	9 (10.7%)	10 (14.7%)	12 (14.8%)	4 (6.0%)	11 (13.6%)
Work in the family business	3 (4.6%)	2 (2.4%)	2 (2.9%)	1 (1.2%)	0 (0.0%)	1 (1.2%)
Work in a full-time job	5 (7.7%)	4 (4.8%)	7 (10.3%)	6 (7.4%)	9 (13.4%)	3 (3.7%)
Work in a part-time job	7 (10.8%)	6 (7.1%)	7 (10.3%)	7 (8.6%)	9 (13.4%)	3 (3.7%)
Other	0 (0.0%)	3 (3.6%)	1 (1.5%)	1 (1.2%)	2 (3.0%)	2 (2.5%)
Missing	2 (3.1%)	1 (1.2%)	1 (1.5%)	0 (0.0%)	2 (3.0%)	0 (0.0%)
Totals	65 (100%)	84 (100%)	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 46 - What Year 9 students reported as their second choice to do when they finish Year 11, by gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	24 (36.9%)	40 (47.6%)	31 (45.6%)	42 (51.9%)	30 (44.8%)	44 (54.3%)
Study FT at college	33 (50.8%)	45 (53.6%)	29 (42.6%)	49 (60.5%)	38 (56.7%)	54 (66.7%)
Study PT at college & work	27 (41.5%)	45 (53.6%)	31 (45.6%)	34 (42.0%)	24 (35.8%)	36 (44.4%)
Take an apprenticeship	16 (24.6%)	16 (19.0%)	12 (17.6%)	18 (22.2%)	11 (16.4%)	15 (18.5%)
Work in the family business	5 (7.7%)	2 (2.4%)	2 (2.9%)	1 (1.2%)	2 (3.0%)	1 (1.2%)
Work in a full-time job	10 (15.4%)	6 (7.1%)	14 (20.6%)	7 (8.6%)	12 (17.9%)	5 (6.2%)
Work in a part-time job	8 (12.3%)	6 (7.1%)	11 (16.2%)	8 (9.9%)	10 (14.9%)	4 (4.9%)
Other	3 (4.6%)	7 (8.3%)	5 (7.4%)	3 (3.7%)	3 (4.5%)	3 (3.7%)
Missing	2 (3.1%)	1 (1.2%)	1 (1.5%)	0 (0.0%)	2 (3.0%)	0 (0.0%)
Totals	65 (100%)	84 (100%)	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 47 - What Year 9 students reported as either first or second choice to do when they finish Year 11, by gender

The next table shows students' comparative confidence in achieving their first choice from above.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Not at all confident	3 (4.6%)	5 (6.0%)	4 (5.9%)	8 (9.9%)	1 (1.5%)	3 (3.7%)
Somewhat confident	40 (61.5%)	52 (61.9%)	35 (51.5%)	46 (56.8%)	38 (56.7%)	55 (67.9%)
Very confident	22 (33.8%)	27 (32.1%)	26 (38.2%)	26 (32.1%)	25 (37.3%)	23 (28.4%)
Missing	0 (0.0%)	0 (0.0%)	3 (4.4%)	1 (1.2%)	3 (4.5%)	0 (0.0%)
Totals	65 (100%)	84 (100%)	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 48 - How confident Year 9 students are that they will be able to get their first choice

At DP1, as well as later on, students were also asked about the reasons that might stop them from continuing their education after Year 11.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Low GCSE grades	43 (66.2%)	62 (73.8%)	43 (63.2%)	59 (72.8%)	41 (61.2%)	59 (72.8%)
Parents	3 (4.6%)	5 (6.0%)	1 (1.5%)	2 (2.5%)	4 (6.0%)	4 (4.9%)
Friends	6 (9.2%)	10 (11.9%)	7 (10.3%)	3 (3.7%)	4 (6.0%)	6 (7.4%)
Other relatives	3 (4.6%)	4 (4.8%)	1 (1.5%)	2 (2.5%)	3 (4.5%)	2 (2.5%)
Leaving friends and family	12 (18.5%)	16 (19.0%)	14 (20.6%)	9 (11.1%)	6 (9.0%)	15 (18.5%)
Uninterested in studying	5 (7.7%)	7 (8.3%)	9 (13.2%)	6 (7.4%)	12 (17.9%)	10 (12.3%)
Care responsibilities	6 (9.2%)	13 (15.5%)	10 (14.7%)	10 (12.3%)	10 (14.9%)	8 (9.9%)
Don't know what to do	15 (23.1%)	28 (33.3%)	15 (22.1%)	36 (44.4%)	22 (32.8%)	27 (33.3%)
Full-time job	15 (23.1%)	24 (28.6%)	20 (29.4%)	17 (21.0%)	16 (23.9%)	25 (30.9%)
Don't like school	13 (20.0%)	11 (13.1%)	14 (20.6%)	9 (11.1%)	17 (25.4%)	16 (19.8%)
School not important	6 (9.2%)	1 (1.2%)	2 (2.9%)	0 (0.0%)	2 (3.0%)	3 (3.7%)
Not enough money	6 (9.2%)	22 (26.2%)	18 (26.5%)	22 (27.2%)	23 (34.3%)	18 (22.2%)
None of the above	10 (15.4%)	10 (11.9%)	11 (16.2%)	6 (7.4%)	10 (14.9%)	11 (13.6%)
Totals	65 (100%)	84 (100%)	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 49 - What might stop them from continuing their education after Year 11

Table 50 presents the distribution of Year 9 students' responses about people who may influence their decisions for the future. When interpreting the percentages please note that students had to select one answer per row (Yes, Maybe, No), and here we report the frequencies of those reported Yes or Maybe. Thus the percentage is calculated over the totals in each column.

	DP1	DP2	DP3
My friends	38 (25.5%)	33 (22.1%)	45 (30.4%)
My parents	123 (82.6%)	92 (61.7%)	90 (60.8%)
Teachers	65 (43.6%)	55 (36.9%)	42 (28.4%)
My brothers or sisters	44 (29.5%)	37 (24.8%)	40 (27.0%)
My cousins	21 (14.1%)	17 (11.4%)	13 (8.8%)
Other relatives*	51 (34.2%)	32 (21.5%)	30 (20.3%)
Counsellors at school	18 (12.1%)	11 (7.4%)	7 (4.7%)
Other	7 (4.7%)	5 (3.4%)	4 (2.7%)
Totals	149 (100%)	149 (100%)	148 (100%)

Table 50 - People who will influence or inspire their decisions about what they want to do after secondary school

The next two tables present students' responses to the question of whether they plan to go to university and the people they know who have been to university. The responses in the first table are presented by gender group whereas the latter presents aggregated responses.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Yes	38 (58.5%)	57 (67.9%)	41 (60.3%)	54 (66.7%)	32 (47.8%)	56 (69.1%)
No	5 (7.7%)	3 (3.6%)	8 (11.8%)	6 (7.4%)	10 (14.9%)	7 (8.6%)
I don't know	20 (30.8%)	23 (27.4%)	17 (25.0%)	20 (24.7%)	21 (31.3%)	18 (22.2%)
Missing	2 (3.1%)	1 (1.2%)	2 (2.9%)	1 (1.2%)	4 (6.0%)	0 (0.0%)
Totals	65 (100%)	84 (100%)	68 (100%)	81 (100%)	67 (100%)	81 (100%)

Table 51 - Intention to go to university

	DP1	DP2	DP3
My parents/carers	75 (50.3%)	77 (51.7%)	76 (51.4%)
My brothers or sisters	15 (10.1%)	14 (9.4%)	12 (8.1%)
My friends	22 (14.8%)	30 (20.1%)	40 (27.0%)
My cousins	43 (28.9%)	47 (31.5%)	52 (35.1%)
Other relatives*	73 (49.0%)	74 (49.7%)	63 (42.6%)
Other	6 (4.0%)	3 (2.0%)	3 (2.0%)
Totals	149 (100%)	149 (100%)	148 (100%)

Table 52 - People they know who have been to university (*aunts, uncles, grandparents)

Figure 36 shows how the mean perceived parental support of the students in your school compares to the overall Year 9 mean, per data collection point.

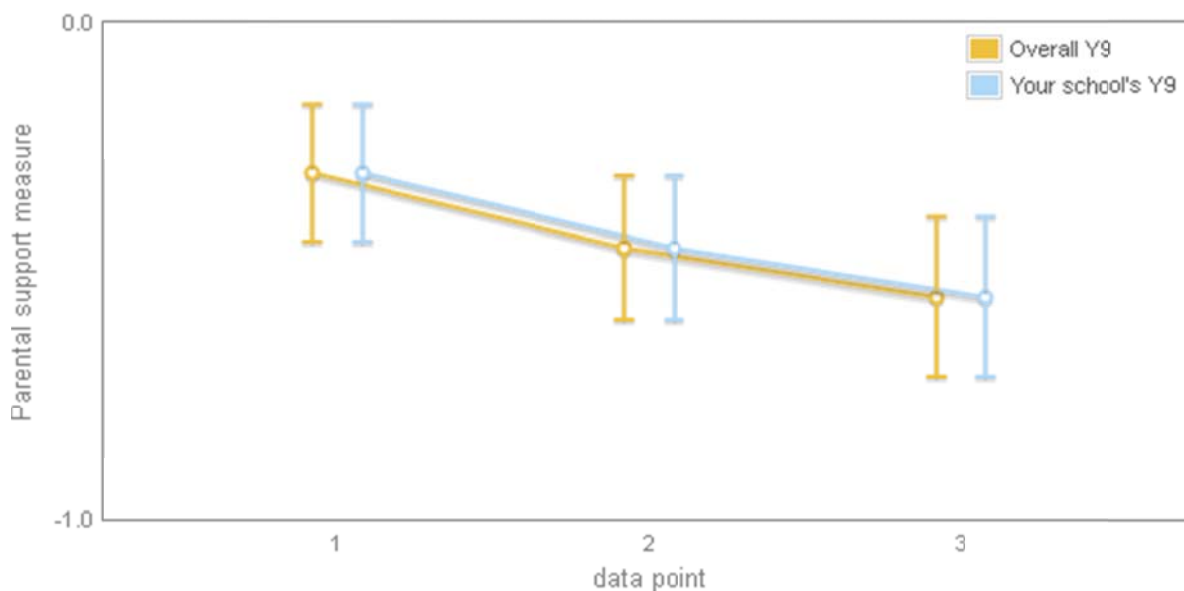


Figure 36 - Mean parental support score of your Year 9 students compared to the overall sample, by DP

Attitudes to mathematics

In the next three figures we present the mean scores of your Year 9 students in the three attitudinal measures we presented earlier (maths disposition, maths identity, maths self-efficacy), by data point and compared to the overall mean scores of Year 9 students in our sample.

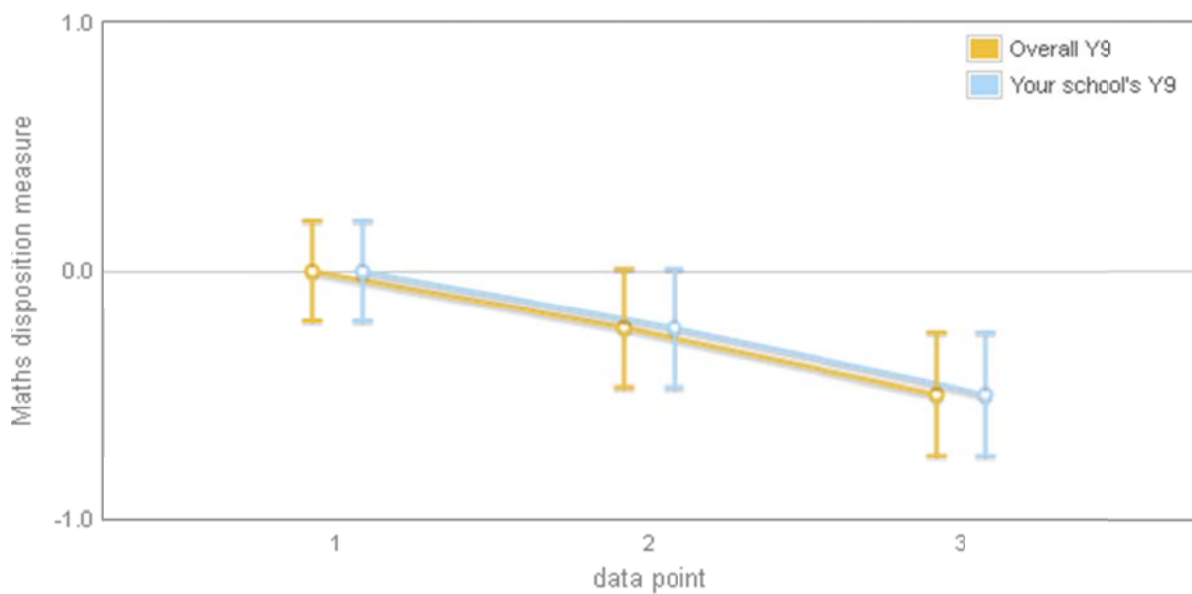


Figure 37 - Mean maths disposition score of your Year 9 students compared to the overall sample, by DP

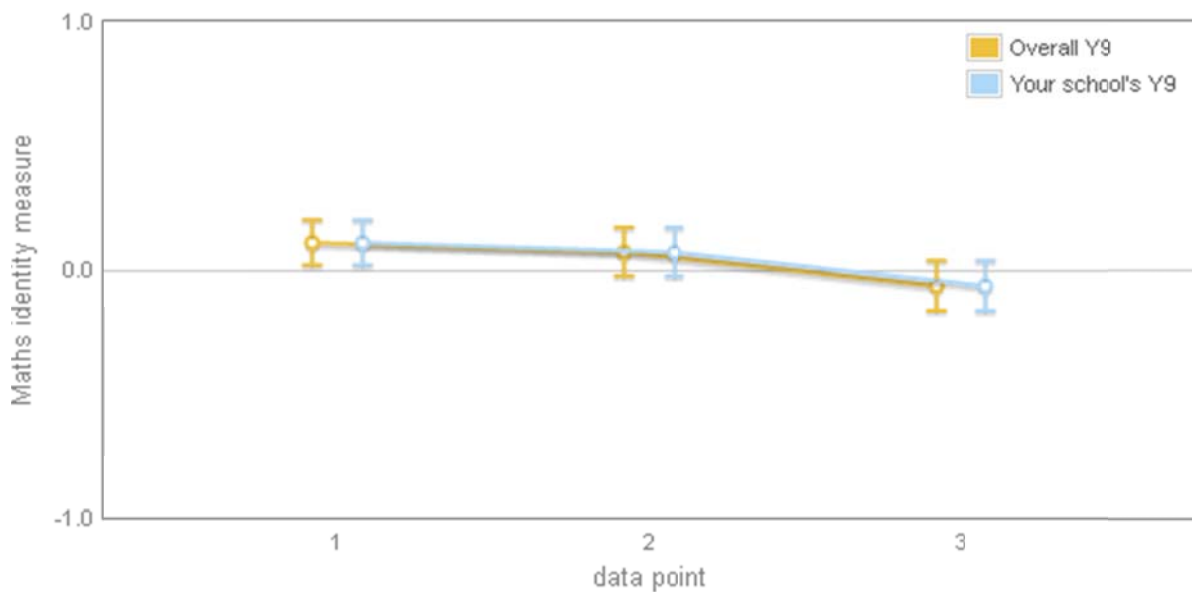


Figure 38 - Mean maths identity score of your Year 9 students compared to the overall sample, by DP

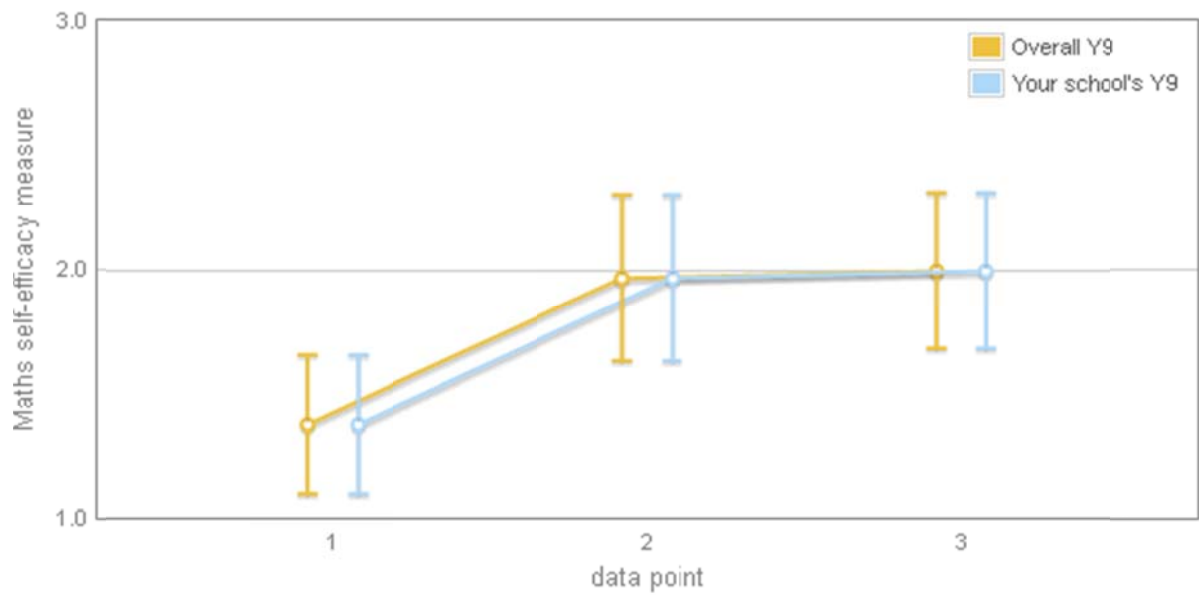


Figure 39 - Mean maths self-efficacy score of your Year 9 students compared to the overall sample, by DP

Your school results by cohort - Year 10

In this section we focus on the results of Year 10 cohort. This includes only the students who were at Year 10 during the academic year 2011-2012 and continue filling in the questionnaires at DP2 (end of academic year 2011-2012) and at DP3 (start of academic year 2012-2013, when students moved to Year 11). Year 10 students enrolled at the study at the start of academic year 2012-2013 in some schools are excluded from this analysis.

Some selective outputs are compared by gender and where possible some findings are compared to the overall Year 10 sample.

A total of 149 students from Year 10 took part in this study from your school. Of these, 60 (approximately 40%) are boys and 89 (60%) are girls. Students' ratings of their ability in the main subjects, during the three DPs of the project are shown in the next 3 tables.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	0 (0.0%)	7 (7.9%)	5 (8.2%)	11 (12.6%)	3 (4.8%)	5 (5.7%)
Average	19 (31.7%)	28 (31.5%)	10 (16.4%)	36 (41.4%)	17 (27.4%)	31 (35.6%)
Good	27 (45.0%)	47 (52.8%)	31 (50.8%)	33 (37.9%)	27 (43.5%)	40 (46.0%)
Excellent	14 (23.3%)	7 (7.9%)	14 (23.0%)	7 (8.0%)	15 (24.2%)	9 (10.3%)
Missing	0 (0.0%)	0 (0.0%)	1 (1.6%)	0 (0.0%)	0 (0.0%)	2 (2.3%)
Totals	60 (100%)	89 (100%)	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 53 - Self-reported ability in Mathematics by DP and gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	2 (3.3%)	2 (2.2%)	1 (1.6%)	1 (1.1%)	2 (3.2%)	5 (5.7%)
Average	15 (25.0%)	18 (20.2%)	16 (26.2%)	23 (26.4%)	25 (40.3%)	25 (28.7%)
Good	32 (53.3%)	53 (59.6%)	25 (41.0%)	51 (58.6%)	22 (35.5%)	43 (49.4%)
Excellent	11 (18.3%)	15 (16.9%)	18 (29.5%)	12 (13.8%)	12 (19.4%)	11 (12.6%)
Missing	0 (0.0%)	1 (1.1%)	1 (1.6%)	0 (0.0%)	1 (1.6%)	3 (3.4%)
Totals	60 (100%)	89 (100%)	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 54 - Self-reported ability in English by DP and gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	0 (0.0%)	4 (4.5%)	3 (4.9%)	9 (10.3%)	3 (4.8%)	6 (6.9%)
Average	17 (28.3%)	27 (30.3%)	17 (27.9%)	31 (35.6%)	22 (35.5%)	31 (35.6%)
Good	34 (56.7%)	43 (48.3%)	27 (44.3%)	38 (43.7%)	27 (43.5%)	34 (39.1%)
Excellent	9 (15.0%)	15 (16.9%)	13 (21.3%)	9 (10.3%)	9 (14.5%)	13 (14.9%)
Missing	0 (0.0%)	0 (0.0%)	1 (1.6%)	0 (0.0%)	1 (1.6%)	3 (3.4%)
Totals	60 (100%)	89 (100%)	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 55 - Self-reported ability in Science by DP and gender

We also asked the students at DP2 and DP3 to report how they think their ability changed from either the start of the year (at DP2) or from last year (at DP3). Their responses are shown in the next tables, by subject.

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	5 (8.2%)	11 (12.6%)	3 (4.8%)	7 (8.0%)
I am the same	11 (18.0%)	23 (26.4%)	16 (25.8%)	22 (25.3%)
I am better now	45 (73.8%)	53 (60.9%)	42 (67.7%)	56 (64.4%)
Missing	0 (0.0%)	0 (0.0%)	1 (1.6%)	2 (2.3%)
Totals	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 56 - Self-reported change in ability over the last year for Mathematics by gender

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	2 (3.3%)	1 (1.1%)	2 (3.2%)	6 (6.9%)
I am the same	15 (24.6%)	37 (42.5%)	17 (27.4%)	29 (33.3%)
I am better now	44 (72.1%)	48 (55.2%)	40 (64.5%)	48 (55.2%)
Missing	0 (0.0%)	1 (1.1%)	3 (4.8%)	4 (4.6%)
Totals	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 57 - Self-reported change in ability over the last year for English by gender

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	2 (3.3%)	6 (6.9%)	6 (9.7%)	11 (12.6%)
I am the same	22 (36.1%)	32 (36.8%)	22 (35.5%)	30 (34.5%)
I am better now	37 (60.7%)	48 (55.2%)	32 (51.6%)	42 (48.3%)
Missing	0 (0.0%)	1 (1.1%)	2 (3.2%)	4 (4.6%)
Totals	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 58 - Self-reported change in ability over the last year for Science by gender

Students were also asked to rate the difficulty of their maths lessons in general. Their responses to this question are shown in the next table.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Too easy	1 (1.7%)	1 (1.1%)	3 (4.9%)	1 (1.1%)	5 (8.1%)	1 (1.1%)
About right	54 (90.0%)	67 (75.3%)	48 (78.7%)	67 (77.0%)	46 (74.2%)	72 (82.8%)
Too hard	2 (3.3%)	18 (20.2%)	8 (13.1%)	18 (20.7%)	7 (11.3%)	12 (13.8%)
Missing	3 (5.0%)	3 (3.4%)	2 (3.3%)	1 (1.1%)	4 (6.5%)	2 (2.3%)
Totals	60 (100%)	89 (100%)	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 59 - How do these students find their maths lessons in general

Future aspirations and parental support

Students were asked various questions about their future plans. The next tables show how boys and girls of Year 10 responded to the question about their preferred options after Year 11, at DP1.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	16 (26.7%)	27 (30.3%)	21 (34.4%)	29 (33.3%)	18 (29.0%)	32 (36.8%)
Study FT at college	16 (26.7%)	31 (34.8%)	14 (23.0%)	42 (48.3%)	18 (29.0%)	47 (54.0%)
Study PT at college & work	10 (16.7%)	24 (27.0%)	10 (16.4%)	12 (13.8%)	8 (12.9%)	4 (4.6%)
Take an apprenticeship	9 (15.0%)	4 (4.5%)	10 (16.4%)	1 (1.1%)	9 (14.5%)	1 (1.1%)
Work in the family business	1 (1.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.6%)	0 (0.0%)
Work in a full-time job	2 (3.3%)	1 (1.1%)	3 (4.9%)	1 (1.1%)	2 (3.2%)	0 (0.0%)
Work in a part-time job	1 (1.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Other	4 (6.7%)	1 (1.1%)	3 (4.9%)	2 (2.3%)	3 (4.8%)	2 (2.3%)
Missing	1 (1.7%)	1 (1.1%)	0 (0.0%)	0 (0.0%)	3 (4.8%)	1 (1.1%)
Totals	60 (100%)	89 (100%)	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 60 - What Year 10 students reported as their first choice to do when they finish Year 11, by gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	4 (6.7%)	5 (5.6%)	9 (14.8%)	12 (13.8%)	7 (11.3%)	10 (11.5%)
Study FT at college	11 (18.3%)	28 (31.5%)	15 (24.6%)	27 (31.0%)	22 (35.5%)	27 (31.0%)
Study PT at college & work	13 (21.7%)	28 (31.5%)	18 (29.5%)	30 (34.5%)	12 (19.4%)	27 (31.0%)
Take an apprenticeship	10 (16.7%)	13 (14.6%)	7 (11.5%)	12 (13.8%)	6 (9.7%)	8 (9.2%)
Work in the family business	0 (0.0%)	2 (2.2%)	0 (0.0%)	3 (3.4%)	0 (0.0%)	0 (0.0%)
Work in a full-time job	12 (20.0%)	6 (6.7%)	8 (13.1%)	1 (1.1%)	4 (6.5%)	2 (2.3%)
Work in a part-time job	6 (10.0%)	6 (6.7%)	2 (3.3%)	1 (1.1%)	3 (4.8%)	4 (4.6%)
Other	1 (1.7%)	0 (0.0%)	1 (1.6%)	1 (1.1%)	4 (6.5%)	5 (5.7%)
Missing	3 (5.0%)	1 (1.1%)	1 (1.6%)	0 (0.0%)	4 (6.5%)	4 (4.6%)
Totals	60 (100%)	89 (100%)	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 61 - What Year 10 students reported as their second choice to do when they finish Year 11, by gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	20 (33.3%)	31 (34.8%)	29 (47.5%)	41 (47.1%)	25 (40.3%)	42 (48.3%)
Study FT at college	27 (45.0%)	59 (66.3%)	29 (47.5%)	69 (79.3%)	40 (64.5%)	74 (85.1%)
Study PT at college & work	23 (38.3%)	52 (58.4%)	28 (45.9%)	42 (48.3%)	20 (32.3%)	31 (35.6%)
Take an apprenticeship	18 (30.0%)	17 (19.1%)	17 (27.9%)	13 (14.9%)	14 (22.6%)	9 (10.3%)
Work in the family business	1 (1.7%)	2 (2.2%)	0 (0.0%)	3 (3.4%)	1 (1.6%)	0 (0.0%)
Work in a full-time job	13 (21.7%)	7 (7.9%)	11 (18.0%)	2 (2.3%)	6 (9.7%)	2 (2.3%)
Work in a part-time job	7 (11.7%)	6 (6.7%)	2 (3.3%)	1 (1.1%)	3 (4.8%)	4 (4.6%)
Other	4 (6.7%)	1 (1.1%)	4 (6.6%)	3 (3.4%)	6 (9.7%)	7 (8.0%)
Missing	3 (5.0%)	1 (1.1%)	1 (1.6%)	0 (0.0%)	4 (6.5%)	4 (4.6%)
Totals	60 (100%)	89 (100%)	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 62 - What Year 10 students reported as either first or second choice to do when they finish Year 11, by gender

The next table shows students' comparative confidence in achieving their first choice from above.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Not at all confident	2 (3.3%)	3 (3.4%)	2 (3.3%)	3 (3.4%)	3 (4.8%)	3 (3.4%)
Somewhat confident	32 (53.3%)	53 (59.6%)	33 (54.1%)	48 (55.2%)	22 (35.5%)	25 (28.7%)
Very confident	24 (40.0%)	32 (36.0%)	26 (42.6%)	36 (41.4%)	33 (53.2%)	55 (63.2%)
Missing	2 (3.3%)	1 (1.1%)	0 (0.0%)	0 (0.0%)	4 (6.5%)	4 (4.6%)
Totals	60 (100%)	89 (100%)	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 63 - How confident Year 10 students are that they will be able to get their first choice

At DP1, as well as later on, students were also asked about the reasons that might stop them from continuing their education after Year 11.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Low GCSE grades	35 (58.3%)	48 (53.9%)	38 (62.3%)	50 (57.5%)	34 (54.8%)	53 (60.9%)
Parents	3 (5.0%)	2 (2.2%)	4 (6.6%)	4 (4.6%)	3 (4.8%)	8 (9.2%)
Friends	7 (11.7%)	1 (1.1%)	8 (13.1%)	6 (6.9%)	6 (9.7%)	3 (3.4%)
Other relatives	1 (1.7%)	2 (2.2%)	2 (3.3%)	1 (1.1%)	1 (1.6%)	2 (2.3%)
Leaving friends and family	15 (25.0%)	15 (16.9%)	13 (21.3%)	13 (14.9%)	6 (9.7%)	6 (6.9%)
Uninterested in studying	7 (11.7%)	4 (4.5%)	7 (11.5%)	6 (6.9%)	9 (14.5%)	4 (4.6%)
Care responsibilities	8 (13.3%)	14 (15.7%)	9 (14.8%)	13 (14.9%)	6 (9.7%)	10 (11.5%)
Don't know what to do	18 (30.0%)	21 (23.6%)	19 (31.1%)	22 (25.3%)	6 (9.7%)	15 (17.2%)
Full-time job	18 (30.0%)	19 (21.3%)	14 (23.0%)	15 (17.2%)	14 (22.6%)	18 (20.7%)
Don't like school	9 (15.0%)	8 (9.0%)	13 (21.3%)	18 (20.7%)	15 (24.2%)	13 (14.9%)
School not important	4 (6.7%)	1 (1.1%)	5 (8.2%)	2 (2.3%)	4 (6.5%)	2 (2.3%)
Not enough money	7 (11.7%)	12 (13.5%)	12 (19.7%)	19 (21.8%)	13 (21.0%)	5 (5.7%)
None of the above	8 (13.3%)	18 (20.2%)	14 (23.0%)	18 (20.7%)	16 (25.8%)	22 (25.3%)
Totals	60 (100%)	89 (100%)	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 64 - What might stop them from continuing their education after Year 11

Table 65 presents the distribution of Year 10 students' responses about people who may influence their decisions for the future. When interpreting the percentages please note that students had to select one answer per row (Yes, Maybe, No), and here we report the frequencies of those reported Yes or Maybe. Thus the percentage is calculated over the totals in each column.

	DP1	DP2	DP3
My friends	32 (21.5%)	32 (21.6%)	32 (21.5%)
My parents	102 (68.5%)	100 (67.6%)	95 (63.8%)
Teachers	50 (33.6%)	47 (31.8%)	52 (34.9%)
My brothers or sisters	29 (19.5%)	39 (26.4%)	22 (14.8%)
My cousins	14 (9.4%)	20 (13.5%)	16 (10.7%)
Other relatives*	42 (28.2%)	40 (27.0%)	31 (20.8%)
Counsellors at school	15 (10.1%)	10 (6.8%)	20 (13.4%)
Other	9 (6.0%)	15 (10.1%)	11 (7.4%)
Totals	149 (100%)	148 (100%)	149 (100%)

Table 65 - People who will influence or inspire their decisions about what they want to do after secondary school

The next two tables present students' responses to the question of whether they plan to go to university and the people they know who have been to university. The responses in the first table are presented by gender group whereas the latter presents aggregated responses.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Yes	33 (55.0%)	60 (67.4%)	27 (44.3%)	57 (65.5%)	29 (46.8%)	61 (70.1%)
No	6 (10.0%)	4 (4.5%)	9 (14.8%)	10 (11.5%)	16 (25.8%)	6 (6.9%)
I don't know	20 (33.3%)	23 (25.8%)	25 (41.0%)	17 (19.5%)	16 (25.8%)	18 (20.7%)
Missing	1 (1.7%)	2 (2.2%)	0 (0.0%)	3 (3.4%)	1 (1.6%)	2 (2.3%)
Totals	60 (100%)	89 (100%)	61 (100%)	87 (100%)	62 (100%)	87 (100%)

Table 66 - Intention to go to university

	DP1	DP2	DP3
My parents/carers	69 (46.3%)	66 (44.6%)	59 (39.6%)
My brothers or sisters	14 (9.4%)	12 (8.1%)	16 (10.7%)
My friends	29 (19.5%)	31 (20.9%)	38 (25.5%)
My cousins	46 (30.9%)	51 (34.5%)	52 (34.9%)
Other relatives*	74 (49.7%)	69 (46.6%)	66 (44.3%)
Other	5 (3.4%)	6 (4.1%)	4 (2.7%)
Totals	149 (100%)	148 (100%)	149 (100%)

Table 67 - People they know who have been to university (*aunts, uncles, grandparents)

Figure 40 shows how the mean perceived parental support of the students in your school compares to the overall Year 10 mean, per data collection point.

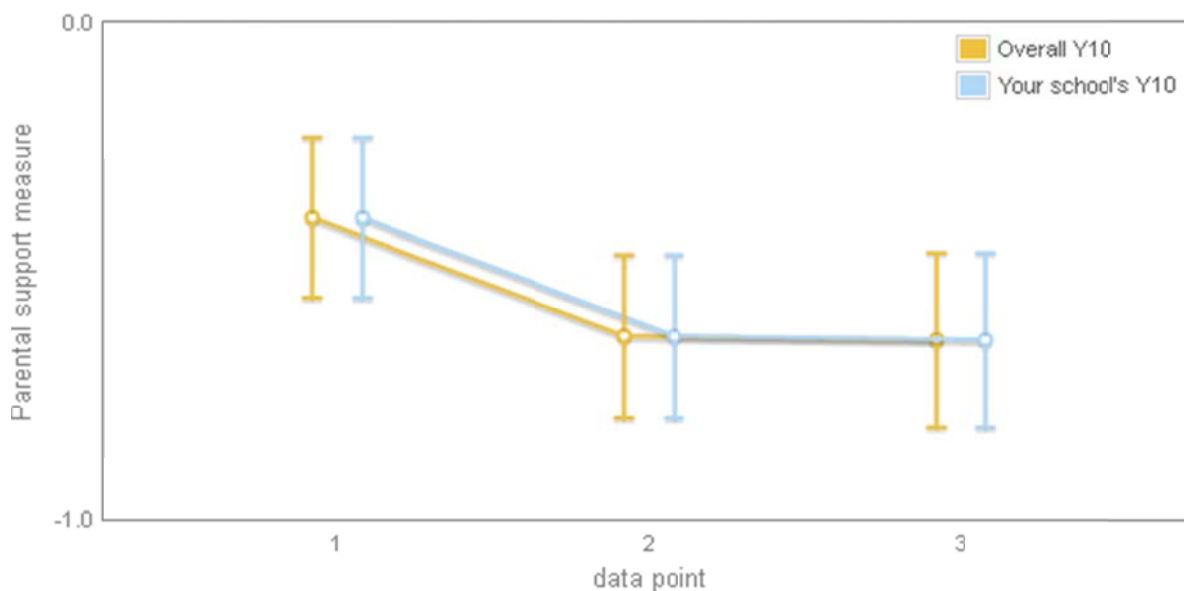


Figure 40 - Mean parental support score of your Year 10 students compared to the overall sample, by DP

Attitudes to mathematics

In the next three figures we present the mean scores of your Year 10 students in the three attitudinal measures we presented earlier (maths disposition, maths identity, maths self-efficacy), by data point and compared to the overall mean scores of Year 10 students in our sample.

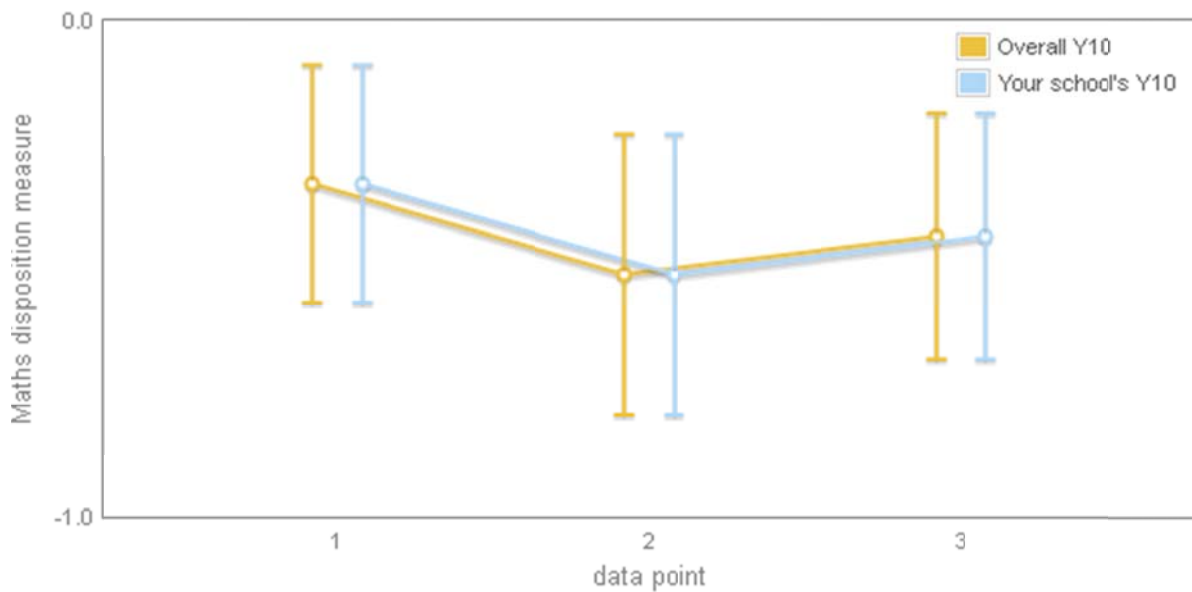


Figure 41 - Mean maths disposition score of your Year 10 students compared to the overall sample, by DP

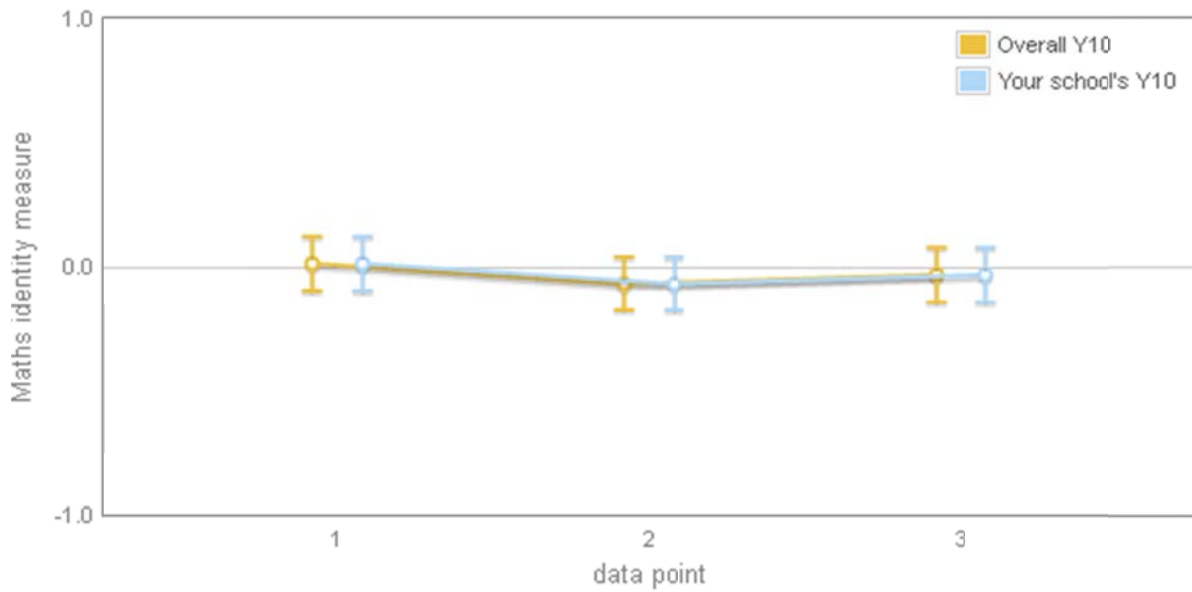


Figure 42 - Mean maths identity score of your Year 10 students compared to the overall sample, by DP

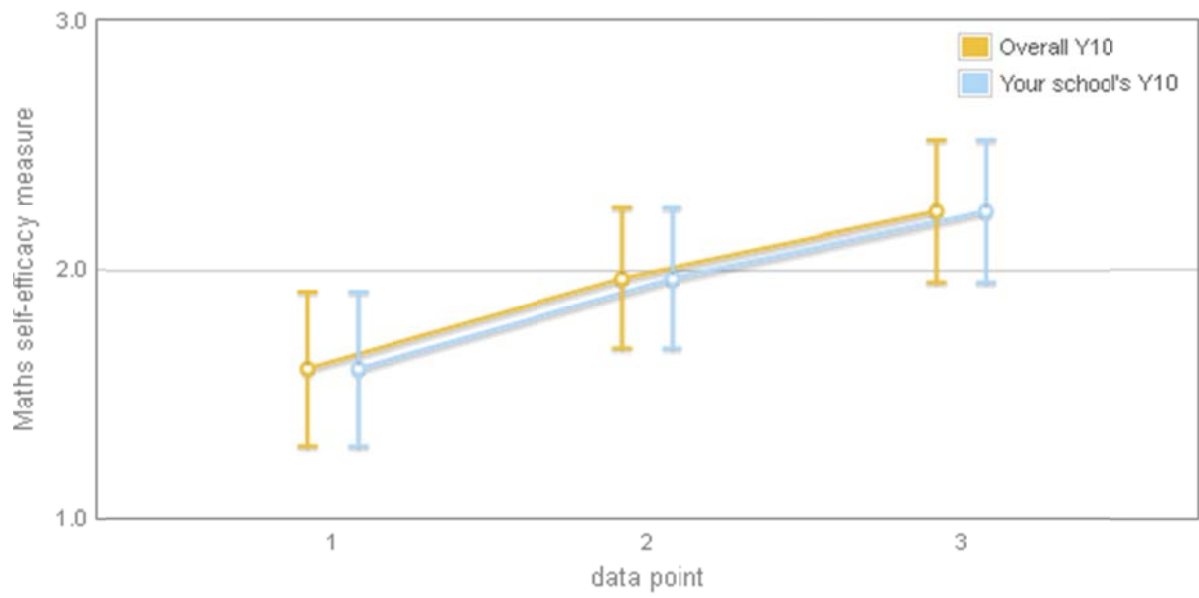


Figure 43 - Mean maths self-efficacy score of your Year 10 students compared to the overall sample, by DP

Your school results by cohort - Year 11

In this section we focus on the results of Year 11 cohort. This includes only the students who were at Year 11 during the academic year 2011-2012 and continue filling in the questionnaires at DP2 (end of academic year 2011-2012) and at DP3 (start of academic year 2012-2013, when students moved to Year 12). Year 11 students enrolled at the study at the start of academic year 2012-2013 in some schools are excluded from this analysis.

Some selective outputs are compared by gender and where possible some findings are compared to the overall Year 11 sample.

A total of 144 students from Year 11 took part in this study from your school. Of these, 65 (approximately 45%) are boys and 79 (55%) are girls. Students' ratings of their ability in the main subjects, during the three DPs of the project are shown in the next 3 tables.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	3 (4.6%)	3 (3.8%)	2 (3.0%)	2 (2.5%)	0 (0.0%)	0 (-%)
Average	11 (16.9%)	22 (27.8%)	11 (16.4%)	24 (29.6%)	2 (40.0%)	0 (-%)
Good	27 (41.5%)	37 (46.8%)	26 (38.8%)	43 (53.1%)	3 (60.0%)	0 (-%)
Excellent	22 (33.8%)	17 (21.5%)	28 (41.8%)	12 (14.8%)	0 (0.0%)	0 (-%)
Missing	2 (3.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (-%)
Totals	65 (100%)	79 (100%)	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 68 - Self-reported ability in Mathematics by DP and gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	2 (3.1%)	2 (2.5%)	2 (3.0%)	1 (1.2%)	1 (20.0%)	0 (-%)
Average	18 (27.7%)	30 (38.0%)	24 (35.8%)	29 (35.8%)	1 (20.0%)	0 (-%)
Good	30 (46.2%)	34 (43.0%)	19 (28.4%)	41 (50.6%)	3 (60.0%)	0 (-%)
Excellent	13 (20.0%)	13 (16.5%)	22 (32.8%)	9 (11.1%)	0 (0.0%)	0 (-%)
Missing	2 (3.1%)	0 (0.0%)	0 (0.0%)	1 (1.2%)	0 (0.0%)	0 (-%)
Totals	65 (100%)	79 (100%)	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 69 - Self-reported ability in English by DP and gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Poor	1 (1.5%)	1 (1.3%)	3 (4.5%)	2 (2.5%)	0 (0.0%)	0 (-%)
Average	7 (10.8%)	27 (34.2%)	9 (13.4%)	23 (28.4%)	2 (40.0%)	0 (-%)
Good	24 (36.9%)	39 (49.4%)	21 (31.3%)	47 (58.0%)	3 (60.0%)	0 (-%)
Excellent	31 (47.7%)	12 (15.2%)	34 (50.7%)	8 (9.9%)	0 (0.0%)	0 (-%)
Missing	2 (3.1%)	0 (0.0%)	0 (0.0%)	1 (1.2%)	0 (0.0%)	0 (-%)
Totals	65 (100%)	79 (100%)	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 70 - Self-reported ability in Science by DP and gender

We also asked the students at DP2 and DP3 to report how they think their ability changed from either the start of the year (at DP2) or from last year (at DP3). Their responses are shown in the next tables, by subject.

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	3 (4.5%)	4 (4.9%)	0 (0.0%)	0 (-%)
I am the same	11 (16.4%)	22 (27.2%)	2 (40.0%)	0 (-%)
I am better now	52 (77.6%)	55 (67.9%)	3 (60.0%)	0 (-%)
Missing	1 (1.5%)	0 (0.0%)	0 (0.0%)	0 (-%)
Totals	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 71 - Self-reported change in ability over the last year for Mathematics by gender

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	5 (7.5%)	3 (3.7%)	0 (0.0%)	0 (-%)
I am the same	23 (34.3%)	27 (33.3%)	4 (80.0%)	0 (-%)
I am better now	38 (56.7%)	51 (63.0%)	1 (20.0%)	0 (-%)
Missing	1 (1.5%)	0 (0.0%)	0 (0.0%)	0 (-%)
Totals	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 72 - Self-reported change in ability over the last year for English by gender

	DP2		DP3	
	Boy	Girl	Boy	Girl
I am worse now	3 (4.5%)	3 (3.7%)	0 (0.0%)	0 (-%)
I am the same	28 (41.8%)	37 (45.7%)	2 (40.0%)	0 (-%)
I am better now	35 (52.2%)	41 (50.6%)	3 (60.0%)	0 (-%)
Missing	1 (1.5%)	0 (0.0%)	0 (0.0%)	0 (-%)
Totals	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 73 - Self-reported change in ability over the last year for Science by gender

Students were also asked to rate the difficulty of their maths lessons in general. Their responses to this question are shown in the next table.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Too easy	8 (12.3%)	1 (1.3%)	7 (10.4%)	4 (4.9%)	0 (0.0%)	0 (-%)
About right	44 (67.7%)	67 (84.8%)	52 (77.6%)	67 (82.7%)	4 (80.0%)	0 (-%)
Too hard	6 (9.2%)	10 (12.7%)	6 (9.0%)	7 (8.6%)	0 (0.0%)	0 (-%)
Missing	7 (10.8%)	1 (1.3%)	2 (3.0%)	3 (3.7%)	1 (20.0%)	0 (-%)
Totals	65 (100%)	79 (100%)	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 74 - How do these students find their maths lessons in general

Future aspirations and parental support

Students were asked various questions about their future plans. The next tables show how boys and girls of Year 11 responded to the question about their preferred options after Year 11, at DP1.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	29 (44.6%)	36 (45.6%)	29 (43.3%)	43 (53.1%)	3 (60.0%)	0 (-%)
Study FT at college	16 (24.6%)	27 (34.2%)	18 (26.9%)	30 (37.0%)	0 (0.0%)	0 (-%)
Study PT at college & work	4 (6.2%)	8 (10.1%)	4 (6.0%)	3 (3.7%)	0 (0.0%)	0 (-%)
Take an apprenticeship	3 (4.6%)	3 (3.8%)	7 (10.4%)	1 (1.2%)	0 (0.0%)	0 (-%)
Work in the family business	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.2%)	0 (0.0%)	0 (-%)
Work in a full-time job	2 (3.1%)	2 (2.5%)	1 (1.5%)	0 (0.0%)	0 (0.0%)	0 (-%)
Work in a part-time job	2 (3.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (-%)
Other	6 (9.2%)	3 (3.8%)	5 (7.5%)	1 (1.2%)	0 (0.0%)	0 (-%)
Missing	3 (4.6%)	0 (0.0%)	3 (4.5%)	2 (2.5%)	2 (40.0%)	0 (-%)
Totals	65 (100%)	79 (100%)	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 75 - What Year 11 students reported as their first choice to do when they finish Year 11, by gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	8 (12.3%)	9 (11.4%)	9 (13.4%)	4 (4.9%)	0 (0.0%)	0 (-%)
Study FT at college	17 (26.2%)	37 (46.8%)	19 (28.4%)	35 (43.2%)	2 (40.0%)	0 (-%)
Study PT at college & work	16 (24.6%)	16 (20.3%)	9 (13.4%)	15 (18.5%)	0 (0.0%)	0 (-%)
Take an apprenticeship	10 (15.4%)	9 (11.4%)	9 (13.4%)	9 (11.1%)	1 (20.0%)	0 (-%)
Work in the family business	1 (1.5%)	0 (0.0%)	1 (1.5%)	0 (0.0%)	0 (0.0%)	0 (-%)
Work in a full-time job	5 (7.7%)	4 (5.1%)	6 (9.0%)	4 (4.9%)	0 (0.0%)	0 (-%)
Work in a part-time job	3 (4.6%)	3 (3.8%)	3 (4.5%)	10 (12.3%)	0 (0.0%)	0 (-%)
Other	0 (0.0%)	1 (1.3%)	2 (3.0%)	0 (0.0%)	0 (0.0%)	0 (-%)
Missing	5 (7.7%)	0 (0.0%)	9 (13.4%)	4 (4.9%)	2 (40.0%)	0 (-%)
Totals	65 (100%)	79 (100%)	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 76 - What Year 11 students reported as their second choice to do when they finish Year 11, by gender

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Continue at this school	37 (56.9%)	45 (57.0%)	37 (55.2%)	47 (58.0%)	3 (60.0%)	0 (-%)
Study FT at college	33 (50.8%)	64 (81.0%)	37 (55.2%)	65 (80.2%)	2 (40.0%)	0 (-%)
Study PT at college & work	19 (29.2%)	24 (30.4%)	13 (19.4%)	18 (22.2%)	0 (0.0%)	0 (-%)
Take an apprenticeship	13 (20.0%)	12 (15.2%)	16 (23.9%)	10 (12.3%)	1 (20.0%)	0 (-%)
Work in the family business	1 (1.5%)	0 (0.0%)	1 (1.5%)	1 (1.2%)	0 (0.0%)	0 (-%)
Work in a full-time job	7 (10.8%)	6 (7.6%)	7 (10.4%)	4 (4.9%)	0 (0.0%)	0 (-%)
Work in a part-time job	5 (7.7%)	3 (3.8%)	3 (4.5%)	10 (12.3%)	0 (0.0%)	0 (-%)
Other	6 (9.2%)	4 (5.1%)	6 (9.0%)	1 (1.2%)	0 (0.0%)	0 (-%)
Missing	5 (7.7%)	0 (0.0%)	9 (13.4%)	4 (4.9%)	2 (40.0%)	0 (-%)
Totals	65 (100%)	79 (100%)	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 77 - What Year 11 students reported as either first or second choice to do when they finish Year 11, by gender

The next table shows students' comparative confidence in achieving their first choice from above.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Not at all confident	3 (4.6%)	3 (3.8%)	1 (1.5%)	1 (1.2%)	0 (0.0%)	0 (-%)
Somewhat confident	22 (33.8%)	34 (43.0%)	15 (22.4%)	26 (32.1%)	0 (0.0%)	0 (-%)
Very confident	36 (55.4%)	42 (53.2%)	43 (64.2%)	45 (55.6%)	3 (60.0%)	0 (-%)
Missing	4 (6.2%)	0 (0.0%)	8 (11.9%)	9 (11.1%)	2 (40.0%)	0 (-%)
Totals	65 (100%)	79 (100%)	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 78 - How confident Year 11 students are that they will be able to get their first choice

At DP1, as well as later on, students were also asked about the reasons that might stop them from continuing their education after Year 11.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Low GCSE grades	25 (38.5%)	41 (51.9%)	32 (47.8%)	44 (54.3%)	0 (0.0%)	0 (-%)
Parents	4 (6.2%)	2 (2.5%)	7 (10.4%)	0 (0.0%)	0 (0.0%)	0 (-%)
Friends	4 (6.2%)	2 (2.5%)	4 (6.0%)	2 (2.5%)	0 (0.0%)	0 (-%)
Other relatives	2 (3.1%)	1 (1.3%)	4 (6.0%)	1 (1.2%)	0 (0.0%)	0 (-%)
Leaving friends and family	5 (7.7%)	14 (17.7%)	3 (4.5%)	3 (3.7%)	0 (0.0%)	0 (-%)
Uninterested in studying	9 (13.8%)	2 (2.5%)	7 (10.4%)	6 (7.4%)	0 (0.0%)	0 (-%)
Care responsibilities	4 (6.2%)	16 (20.3%)	5 (7.5%)	10 (12.3%)	1 (20.0%)	0 (-%)
Don't know what to do	12 (18.5%)	11 (13.9%)	13 (19.4%)	11 (13.6%)	0 (0.0%)	0 (-%)
Full-time job	10 (15.4%)	15 (19.0%)	12 (17.9%)	9 (11.1%)	0 (0.0%)	0 (-%)
Don't like school	11 (16.9%)	8 (10.1%)	15 (22.4%)	6 (7.4%)	0 (0.0%)	0 (-%)
School not important	7 (10.8%)	1 (1.3%)	8 (11.9%)	3 (3.7%)	0 (0.0%)	0 (-%)
Not enough money	6 (9.2%)	5 (6.3%)	11 (16.4%)	7 (8.6%)	0 (0.0%)	0 (-%)
None of the above	25 (38.5%)	20 (25.3%)	20 (29.9%)	22 (27.2%)	2 (40.0%)	0 (-%)
Totals	65 (100%)	79 (100%)	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 79 - What might stop them from continuing their education after Year 11

Table 80 presents the distribution of Year 11 students' responses about people who may influence their decisions for the future. When interpreting the percentages please note that students had to select one answer per row (Yes, Maybe, No), and here we report the frequencies of those reported Yes or Maybe. Thus the percentage is calculated over the totals in each column.

	DP1	DP2	DP3
My friends	34 (23.6%)	29 (19.6%)	0 (0.0%)
My parents	89 (61.8%)	88 (59.5%)	1 (20.0%)
Teachers	54 (37.5%)	39 (26.4%)	1 (20.0%)
My brothers or sisters	34 (23.6%)	24 (16.2%)	0 (0.0%)
My cousins	15 (10.4%)	12 (8.1%)	0 (0.0%)
Other relatives*	25 (17.4%)	21 (14.2%)	0 (0.0%)
Counsellors at school	10 (6.9%)	17 (11.5%)	0 (0.0%)
Other	10 (6.9%)	11 (7.4%)	0 (0.0%)
Totals	144 (100%)	148 (100%)	5 (100%)

Table 80 - People who will influence or inspire their decisions about what they want to do after secondary school

The next two tables present students' responses to the question of whether they plan to go to university and the people they know who have been to university. The responses in the first table are presented by gender group whereas the latter presents aggregated responses.

	DP1		DP2		DP3	
	Boy	Girl	Boy	Girl	Boy	Girl
Yes	40 (61.5%)	60 (75.9%)	38 (56.7%)	57 (70.4%)	4 (80.0%)	0 (-%)
No	13 (20.0%)	5 (6.3%)	12 (17.9%)	5 (6.2%)	1 (20.0%)	0 (-%)
I don't know	10 (15.4%)	12 (15.2%)	14 (20.9%)	19 (23.5%)	0 (0.0%)	0 (-%)
Missing	2 (3.1%)	2 (2.5%)	3 (4.5%)	0 (0.0%)	0 (0.0%)	0 (-%)
Totals	65 (100%)	79 (100%)	67 (100%)	81 (100%)	5 (100%)	0 (100%)

Table 81 - Intention to go to university

	DP1	DP2	DP3
My parents/carers	61 (42.4%)	61 (41.2%)	4 (80.0%)
My brothers or sisters	19 (13.2%)	22 (14.9%)	0 (0.0%)
My friends	37 (25.7%)	52 (35.1%)	2 (40.0%)
My cousins	46 (31.9%)	56 (37.8%)	2 (40.0%)
Other relatives*	80 (55.6%)	72 (48.6%)	4 (80.0%)
Other	2 (1.4%)	6 (4.1%)	1 (20.0%)
Totals	144 (100%)	148 (100%)	5 (100%)

Table 82 - People they know who have been to university (*aunts, uncles, grandparents)

Figure 44 shows how the mean perceived parental support of the students in your school compares to the overall Year 11 mean, per data collection point.

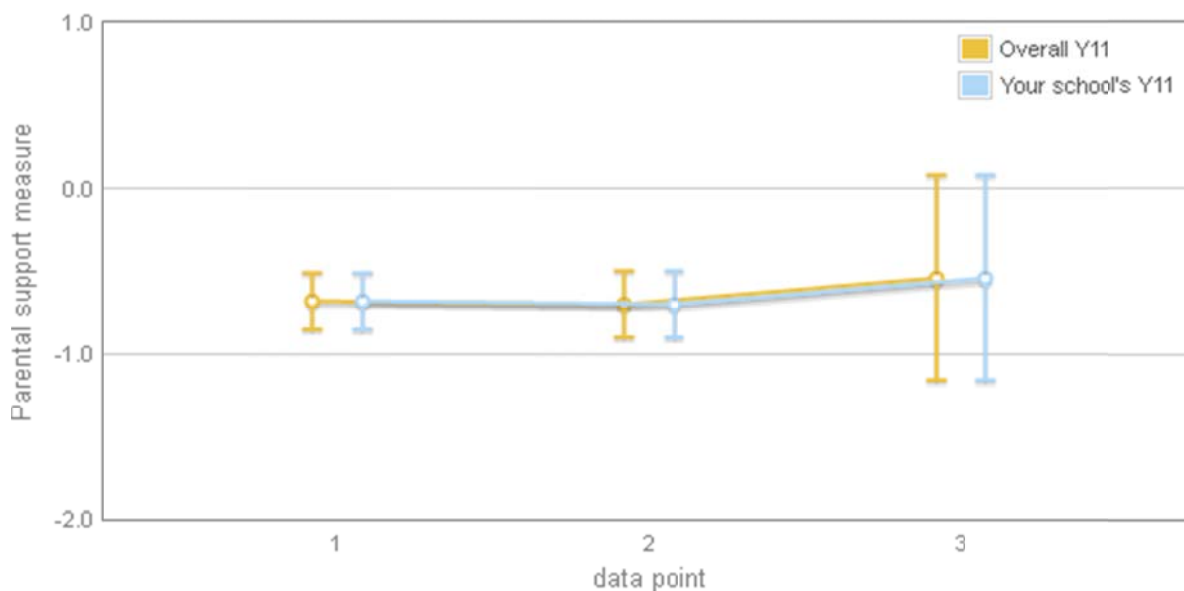


Figure 44 - Mean parental support score of your Year 11 students compared to the overall sample, by DP

Attitudes to mathematics

In the next three figures we present the mean scores of your Year 11 students in the three attitudinal measures we presented earlier (maths disposition, maths identity, maths self-efficacy), by data point and compared to the overall mean scores of Year 11 students in our sample.

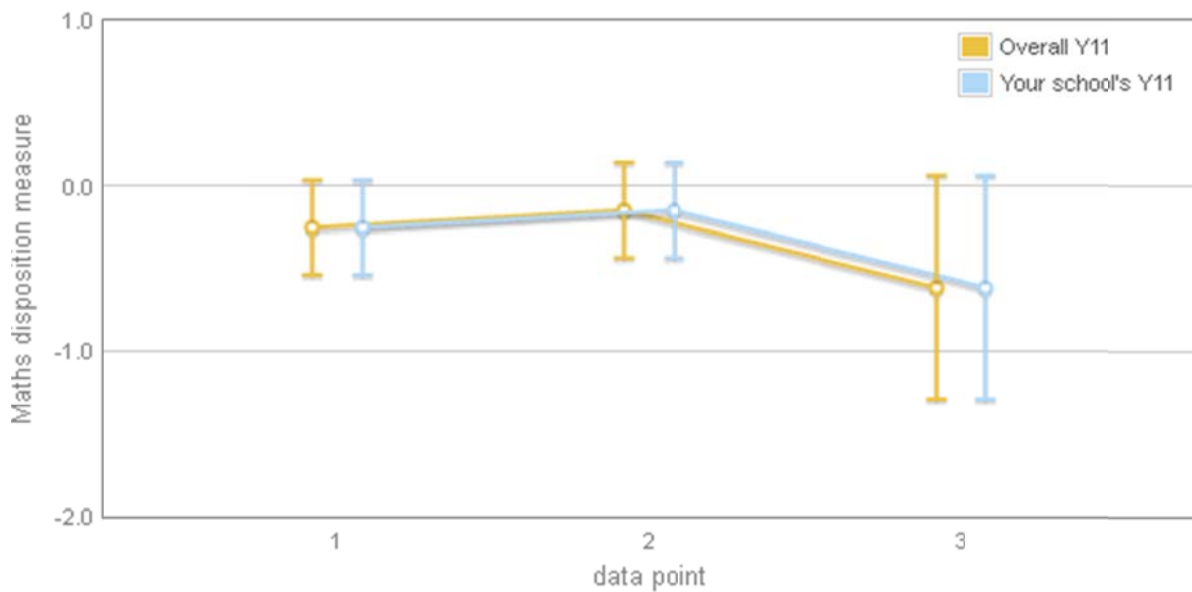


Figure 45 - Mean maths disposition score of your Year 11 students compared to the overall sample, by DP

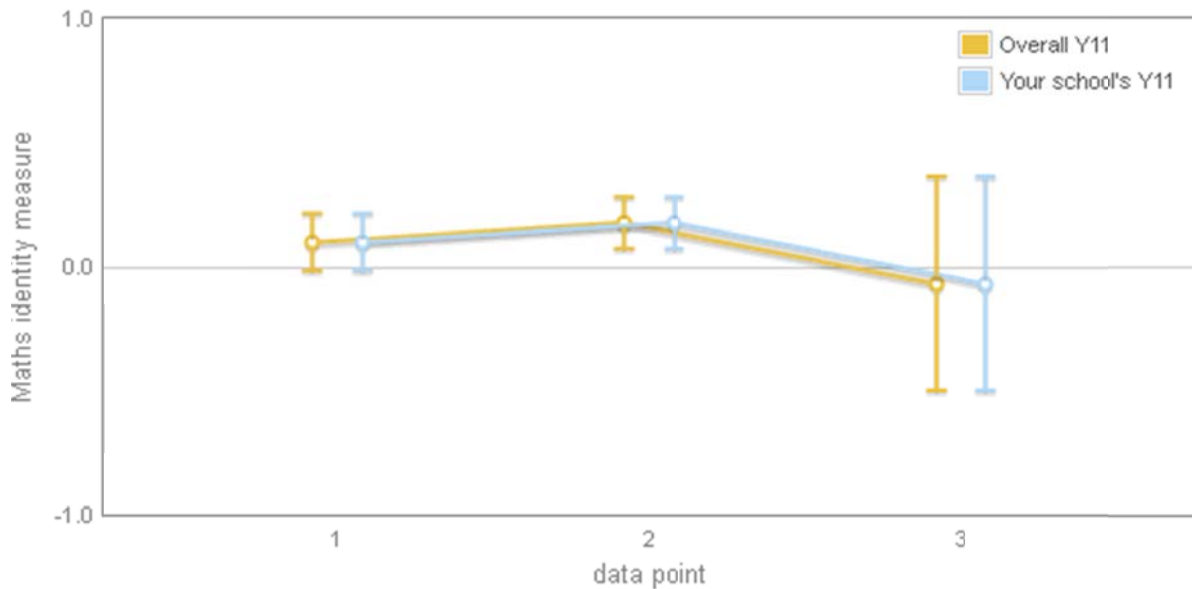


Figure 46 - Mean maths identity score of your Year 11 students compared to the overall sample, by DP

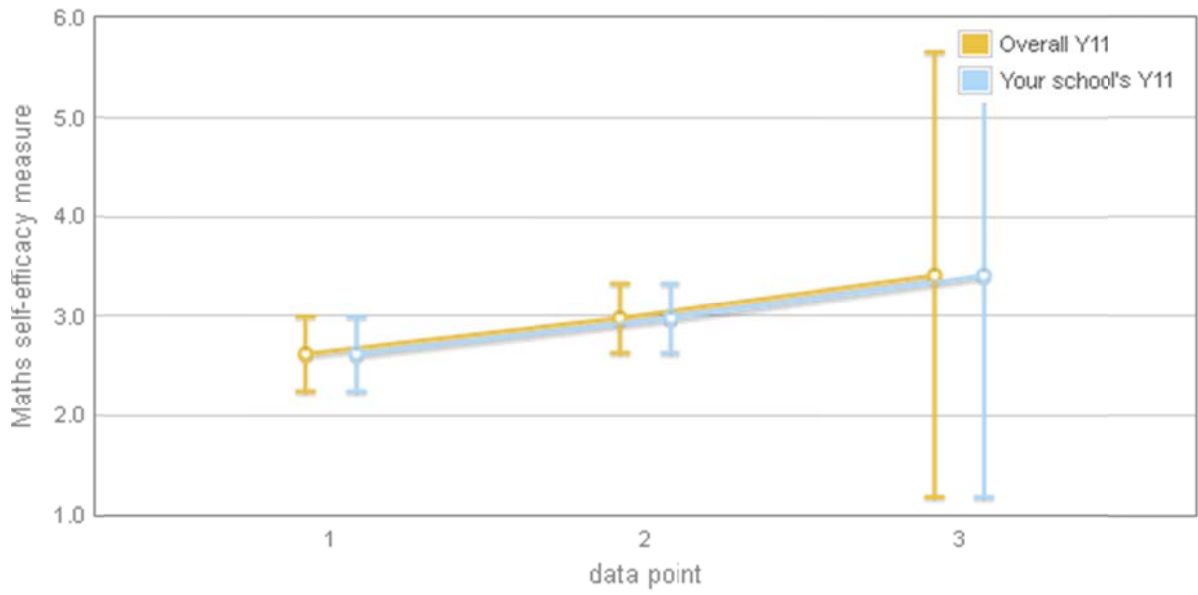


Figure 47 - Mean maths self-efficacy score of your Year 11 students compared to the overall sample, by DP

References

- Alagumalai, S., Curtis, D. D., & Hungi, N. (Eds.). (2005). *Applied Rasch Measurement: A Book of Exemplars* Springer Netherlands.
- Bond, T. G., & Fox, C. M. (2001). *Applying the Rasch Model: Fundamental Measurement in the Human Sciences*. NJ: Lawrence Erlbaum Associates Inc.
- Linacre, J. M. (2000). Comparing "Partial Credit" and "Rating Scale" Models. *Rasch Measurement Transactions*, 14(3), 768.
- Linacre, J. M. (2002). Optimizing Rating Scale Category Effectiveness *Journal of Applied Measurement*, 3(1), 85-106.
- Linacre, J. M. (2014). *Winsteps® Rasch measurement computer program*. Beaverton, Oregon: Winsteps.com.
- Masters, G. N., & Keeves, J. P. (Eds.). (1999). *Advances in Measurement in Educational Research and Assessment* Oxford: Pergamon.
- Müller, H. (1987). A rasch model for continuous ratings. *Psychometrika*, 52(2), 165-181. doi: 10.1007/BF02294232
- Pampaka, M., Williams, J., & Hutchenson, G. (2012). Measuring students' transition into university and its association with learning outcomes. *British Educational Research Journal*, 38(6), 1041-1071.
- Pampaka, M., Williams, J. S., Hutchenson, G., Black, L., Davis, P., Hernandez-Martines, P., & Wake, G. (2013). Measuring Alternative Learning Outcomes: Dispositions to Study in Higher Education. *Journal of Applied Measurement*, 14(2), 197-218.
- Pampaka, M., Williams, J. S., Hutcheson, G., Wake, G., Black, L., Davis, P., & Hernandez - Martinez, P. (2012). The association between mathematics pedagogy and learners' dispositions for university study. *British Educational Research Journal*, 38(3), 473-496.
- Wolfe, E. W., & Smith Jr., E. V. (2007a). Instrument Development Tools and Activities for Measure Validation Using Rasch Models: Part I - Instrument Development Tools. *Journal of Applied Measurement*, 8(1), 97-123.
- Wolfe, E. W., & Smith Jr., E. V. (2007b). Instrument Development Tools and Activities for Measure Validation Using Rasch Models: Part II - Validation Activities. *Journal of Applied Measurement*, 8(2), 204-234.
- Wright, B. D., & Masters, G. N. (1982). *Rating Scale Analysis*. Chicago: MESA Press.
- Wright, B. D., & Mok, M. (2000). Rasch Models Overview. *Journal of Applied Measurement*, 1(1), 83-106.
- Websites for further information:
- www.teleprism.com (current project)
- www.transmaths.org (previous relevant work)

Appendices

Appendix 1: An example: Creating a measure of Parental Involvement/Support

As described above the starting ingredient in the process of measure construction is the questions. For the case of ‘parental involvement/support’, the items as appeared in the questionnaire (with some labels shown in red), are shown below:

How often do your parents/carers do the following?
 (Please circle the most appropriate number in each line)

	Never	Rarely	Sometimes	Often	All the time
Check whether you have done your homework [parents1]	1	2	3	4	5
Help you with your homework [parents2]	1	2	3	4	5
Praise or reward you for good grades [parents3]	1	2	3	4	5
Reduce your rewards because of low grades [parents4]	1	2	3	4	5
Find you a tutor to help you with your homework [parents5]	1	2	3	4	5

We hypothesise that these items form together an underlying construct of ‘students perception of parental involvement’ and we use the tools provided by the Rasch Analysis to create and validate this measure (and others). Another necessary ingredient to perform this analysis/validation is the students’ responses to these questions which are denoted by the values 1 to 5, as shown above: the higher the score the more frequent each practice.

The ultimate outcome, if measurement is deemed valid, would be a score for each student on a logit scale, which can be used for further analysis. Our decisions about the validity of the measures are based on the following statistical indices, with the example results shown here:

Item fit statistics

Fit statistics (i.e. Infit and Outfit mean-squares, MNSQ) are used in the Rasch context to check fulfilment of unidimensionality assumption and to flag items that may be problematic in this respect. In a ‘perfect’ measure these statistics should be 1, but an acceptable range is within 0.6 to 1.4 depending on the analysis. For most of our analyses we take the value of 1.4 as a value for infit and outfit mean squares that suggests causes for concern, and we explore those more.

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT		OUTFIT		PT-MEASURE		EXACT MATCH		ITEM
					MNSQ	ZSTD	MNSQ	ZSTD	CORR.	EXP.	OBS%	EXP%	
1	110814	30607	-.96	.01	.94	-7.4	.94	-7.6	.66	.63	40.8	39.7	parents1
2	89608	30548	-.20	.01	.72	-9.9	.76	-9.9	.66	.63	45.0	36.3	parents2
3	107576	30449	-.86	.01	1.00	-.4	1.00	-.4	.63	.63	39.1	39.7	parents3
4	64953	30388	.68	.01	1.16	9.9	1.19	9.9	.58	.61	38.9	39.1	parents4
5	51165	30429	1.34	.01	1.38	9.9	1.36	9.9	.53	.57	49.2	52.3	parents5
MEAN	84823.2	30484	.00	.01	1.04	.4	1.05	.4			42.6	41.4	
S.D.	23425.6	80.9	.89	.00	.22	8.3	.21	8.4			3.9	5.6	

Table A1 - Item statistics output from Winsteps

As shown in Table A1, there are no threats for this aspect of validity since all items appear within acceptable ranges.

Category Statistics

Rating scales and their response formats serve as tools with which the researcher communicates with the respondents, a function defined by Lopez (1996) as ‘communication validity’. Examining category statistics is essential within the Rasch measurement framework in order to confirm the appropriateness of the Likert scale used and its interpretation by the respondents. A well-functioning scale should, at least, present ordered average measures, and ordered step calibrations (Linacre, 2002) with acceptable fit statistics, as shown here (see Table A2 and/or Figure A1). In the probability plot of Figure 2, the four thresholds (i.e. boundary between category 1 and 2, 2 and 3, 3 and 4, 4 and 5) are denoted with arrows superimposed on the probability curves of each category. Most of those seem to be ordered, however there is a small overlap between the first two boundaries, probably because of the ambiguity of response categories “rarely” and “sometimes”. An improved measure could be calculated by collapsing these two options (which also provides suggestions for improving the questionnaire).

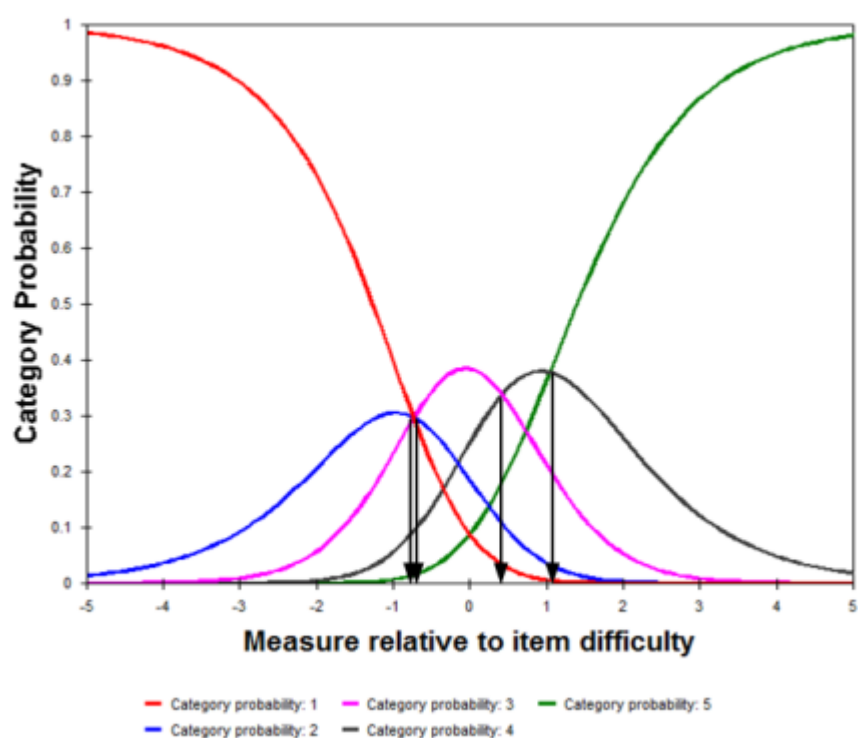


Figure A1 - Category probability against item difficulty

SUMMARY OF CATEGORY STRUCTURE. Model="R"

CATEGORY LABEL	SCORE	OBSERVED COUNT	OBSERVED %	OBSVD AVRGE	SAMPLE EXPECT	INFIT MNSQ	OUTFIT MNSQ	STRUCTURE CALIBRATN	CATEGORY MEASURE
1	1	41053	27	-1.57	-1.54	.93	.96	NONE	(-2.27)
2	2	25626	17	-.71	-.78	1.00	.94	-.74	-.97
3	3	34437	23	-.09	-.10	.94	.95	-.73	-.06
4	4	28025	18	.52	.51	1.01	1.13	.42	.93
5	5	23280	15	1.07	1.10	1.15	1.29	1.04	(2.43)
MISSING		835	1	-.51					

OBSERVED AVERAGE is mean of measures in category. It is not a parameter estimate.

Table A2 - Category statistics output from Winsteps

Appendix 2: A paper on the validation of a measure of mathematics attitudes

For those interested we attach a copy of our recent paper which is to be presented in Canada on July 16th.

Pampaka, M., & Wo, L. (2014). Revisiting Mathematical Attitudes of students in Secondary Education. Proceedings of the 38th Conference of the International Group for the Psychology of Mathematics Education (PME38). Canada.