

Hello Future

Metacognition and learning strategies workshop evaluation



August 2025

Contents

Introduction	2
Introduction and aims	2
The evaluation	2
Data collection - intervention school	4
Data collection - control school	4
Sample	5
Programme impact	6
Control school	6
Intervention school	6
Changes in knowledge of cognition - Years 7s in the intervention school	7
Changes in locus of control - All year groups in the intervention school	9
Sense of belonging - Year 7 and 8 learners in the intervention school	10
Demographic differences - free school meal eligibility	11
Demographic differences - sex	12
Demographic differences - ethnicity	13
Feedback on the workshops	14
Impact of the workshops	14
Delivery of the workshops	15
Reflections	16
The control sample	16
Year 9 comparator	16
Knowledge of cognition	16
Regulation of cognition	16
Locus of control	17
Sense of belonging	17
Appendix - full results (intervention sample)	18
Metacognitive self-awareness	18
Locus of control	20
Academic confidence	22
Higher education progression	23

Introduction

Introduction and aims

Hello Future is the Cumbria Consortia forming part of the OFS funded Uni Connect programme. It is a targeted programme that works with local partners to work towards reducing the gap between the least and most represented in Higher Education through the delivery of outreach activity in Cumbrian schools and colleges. It commissioned Alterline, an independent research agency, to produce evidence about the impact of Hello Future's metacognition and learning strategies workshops.

This evaluation considered the impact that Hello Future's metacognition and learning strategies workshops have on learner's ability to prepare for academic tasks/assessments, use of independent study strategies and self-perceived ability and confidence to reach grades. Specifically, it sought to understand if taking part in this workshop series improves learners':

- Metacognitive self-awareness
- Sense of internal locus of control
- Academic confidence
- Use of appropriate study strategies
- Knowledge of higher education
- Sense of belonging in higher education
- Intention to take up higher education.

The study also aims to understand if the impact varies across different characteristics, including year group, free school meal eligibility, sex and ethnicity.

The evaluation

The workshops were designed to support Hello Future's commitment to raise attainment at key stage 4. A theory of change associated with the workshops is shown overleaf.

Two schools were selected to be involved evaluation. The intervention school was selected because learners in that school had not previously received this series of workshop and it was one of Hello Future's target schools to work with. The control school was likewise selected because it had not received any interventions from Hello Future and had no intention to deliver any interventions around metacognition or study strategies during the period in which the intervention school received theirs.

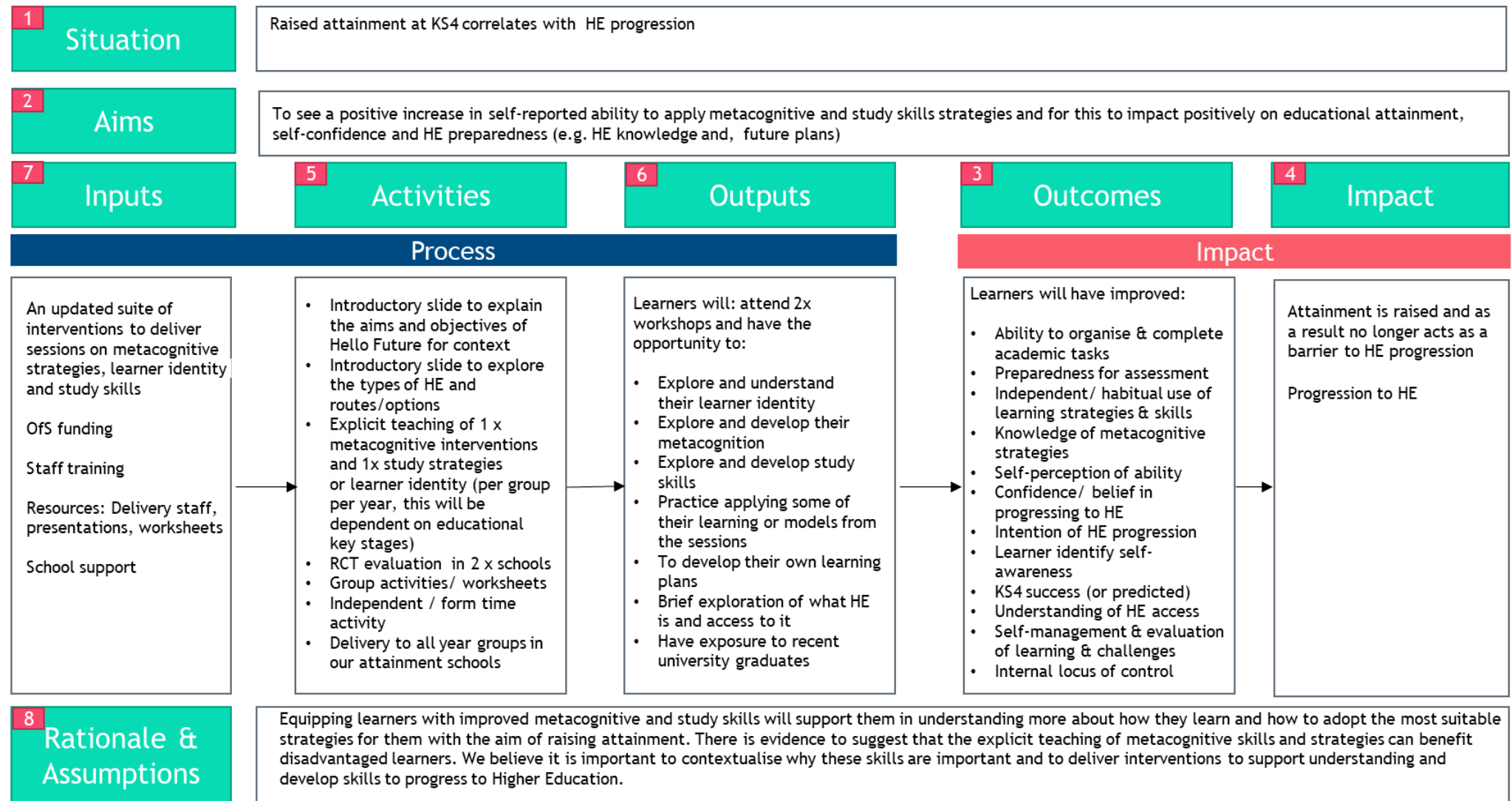
The workshops took place in the intervention school in July 2025; the first on 2nd July and the second on the 16th July and each lasted 60 minutes. The workshops were delivered to groups in years 7 to 9.

The first workshop aimed to help learners understand what metacognition is and how it can help them learn, to give learners to opportunity to learn about the AGES model, and to give learners the opportunity to learn something new and reflect on the process of doing so. The second workshop covered study strategies. The content is intended to be progressive meaning that the same sessions are delivered in each year group.

A survey instrument was designed using validated scales to measure the outcomes in the theory of change. More information about the measures used can be found in the appendix.

Ethical approval for the evaluation was sought, and obtained, from the University of Cumbria.

Theory of change for Hello Future's metacognitive programme



Data collection - intervention school

The pre-survey was administered at the start of the first workshop and most learners took part in this online. However, as some learners were not able to be placed in computer rooms for the workshops, paper copies were used which were later entered online by the Hello Future team. The post-survey was administered at the end of the second workshop and was completed in a mixture of online and offline formats, as with the pre-survey.

Permissions were included in the survey to link survey responses to learner's Higher Education Access Tracker (HEAT) record and, to mitigate against the limitations of self-reported data around demographic information, learner characteristics have been verified through this.

Data collection - control school

While it was intended that learners were given formal time to complete the survey at the control school, at times which aligned with the first and second workshop at the intervention school, this was not rolled out at the point of delivery and instead it was assigned as non-compulsory homework. After this failed to illicit sufficient responses, the Hello Future team visited the control school and asked learners to fill out a paper survey. To gain comparable post-surveys, email addresses were collected and a follow-up invitation sent. Hello Future staff also revisited the school to get post-survey completions from the same learners. Hello Future staff entered the responses to the paper surveys online.

While demographic data was obtained through HEAT for completed responses from the intervention school, this could not be achieved for the control school. This means that it is not possible to know if demographic factors match on elements which were typically not known by learners, namely free school meal eligibility.

Sample

In total, 39 valid responses from the control school and 212 from the intervention school were received from the pre- and post- survey. Responses were accepted if they had a complete response to the knowledge of cognition scale (the primary outcome) in the pre- and post- survey, though they did not need to have complete responses to any of the other items measured. There was a much higher rate of rejection of paper surveys due to higher levels of missing data.

Notably, the control sample did not include any learners from year 9, whereas the intervention sample did. Findings are initially, therefore, compared between the years 7 and 8s, and findings from year 9s are supplemented later. There was a slight skew in the control sample towards year 7, whereas the intervention sample skewed towards year 8.

As the majority of the control sample could not be matched to HEAT data, it is not known whether or not the vast majority of those who took part were eligible for free school meals. As there were fewer free school meal eligible pupils in the control school as a whole, we would expect that there would be fewer such pupils in the control sample. Overall, 26% of the intervention sample was eligible for free school meals, which is slightly lower than the proportion of pupils eligible for free school meals in the school population.

Responses in the control school were roughly equally split between female and male whereas they skewed slightly towards female in the intervention school. While similar proportions in the control and intervention sample came from a White ethnic background, the intervention school had higher proportions of learners from a Black ethnic background.

Sample make-up of the valid pre- and post- survey entries

	Control	Intervention (years 7 & 8)	Intervention (year 9)
Year group			
Year 7	53% (21)	45% (56)	
Year 8	45% (18)	55% (68)	
Year 9			100% (88)
Eligibility for free school meals			
Yes	3% (1)	28% (35)	22% (20)
No	0% (0)	68% (84)	71% (63)
Unknown	97% (38)	4% (10)	7% (6)
Sex			
Female	49% (19)	56% (70)	56% (50)
Male	51% (20)	44% (54%)	42% (37)
Unknown	0% (0)	0% (0)	2% (2)
Ethnicity			
Asian	8% (3)	2% (2)	3% (3)
Black	3% (1)	10% (12)	11% (10)
Mixed	5% (2)	4% (5)	1% (1)
White	82% (32)	85% (10%)	83% (74)
Other	3% (1)	0% (0)	1% (1)

Valid survey responses represent 54% of years 7 - 9 learners in the intervention school; given not all learners will have attended both the pre- and post- session, it is likely that these responses represent a higher proportion of those eligible participants, however, attendance data has not been possible to secure.

Programme impact

Control school

Among the control sample, limited differences were observed between the pre- and post- survey results, with variance of between 0 and 0.1 out of a total mean of 5 observed between the two periods. Given the length of time between the two workshops, it would be expected that the control group would not see any substantive differences in learners' responses to the items.

Pre- and post- survey comparison among the control school (year 7s and 8s only)

Group	Score Pre-	Score Post-	P-value	Cohen's D	Sample size
Knowledge of cognition	3.49	3.44			39
Regulation of cognition	3.19	3.19			35
Cognitive strategies	3.30	3.21			37
Locus of control: internal	2.88	2.92			32
Locus of control: powerful others	2.83	2.98			32
Locus of control: unknown	3.10	3.00			32
Academic confidence	3.26	3.19			38
Knowledge of higher education	3.20	3.30			37
Sense of belonging	2.94	2.97			38
Intention to enter HE	2.29	2.32			38

Intervention school

When looking at changes between the pre- and post-survey among year 7s and 8s in the intervention sample, decreases are seen in scores between the pre- and post- surveys for knowledge of cognition, though it should be noted that the effect of this is negligible ($d=0.147$). This is possibly driven by the combination of year 7s and year 8s together. When examining each group separately, there was a small decrease in year 7s knowledge of cognition scores from 3.61 to 3.44 out of 5 ($p=0.02$, $d=0.241$) whereas there was no significant difference in year 8s scores (3.73 out of 5 in the pre-survey and 3.69 out of 5 in the post-survey). No associated differences were seen in year 9s. It appears, therefore, that any declines in knowledge of cognition are associated only with younger age groups.

Decreases were also seen in year 7 and 8s locus of control scores, with a large decrease for internal locus of control ($d=0.951$) and a small increase in unknown locus of control ($d=0.335$). When considering year 9s, similar findings emerged around locus of control, in that belief that this was internal decreased with a large effect ($d=1.149$) and increased in being unknown, again with a large effect ($d=0.929$).

No significant changes were observed among learners' regulation of cognition, cognitive strategies, academic confidence, knowledge of higher education, sense of belonging or intention to enter higher education.

Pre- and post- survey comparison from the intervention school (year 7s and 8s only)

Group	Score Pre-	Score Post-	P-value	Cohen's D	Sample size
Knowledge of cognition	3.68 ↑	3.58 ↓	0.03	0.147	124
Regulation of cognition	2.78	2.81			115
Cognitive strategies	3.40	3.31			117
Locus of control: internal	3.40 ↑	2.69 ↓	< 0.000001	0.951	106
Locus of control: powerful others	2.80	2.71			106
Locus of control: unknown	3.02 ↓	3.36 ↑	0.006	0.335	106
Academic confidence	2.79	2.86			121
Knowledge of higher education	3.25	3.30			117
Sense of belonging	2.87 ↓	3.04 ↑	0.01	0.167	116
Intention to enter HE	3.16	3.05			121

Pre- and post- survey comparison among the wider sample of responses from the intervention school (year 9s only)

Group	Score Pre-	Score Post-	P-value	Cohen's D	Sample size
Knowledge of cognition	3.66	3.63			88
Regulation of cognition	3.91	2.97			85
Cognitive strategies	3.28	3.24			85
Locus of control: internal	3.52 ↑	2.67 ↓	< 0.000001	1.149	88
Locus of control: powerful others	2.63	2.71			88
Locus of control: unknown	2.93 ↓	3.62 ↑	< 0.000001	0.929	88
Academic confidence	2.81	2.80			85
Knowledge of higher education	3.20	3.26			87
Sense of belonging	2.77	2.83			86
Intention to enter HE	3.34	3.24			86

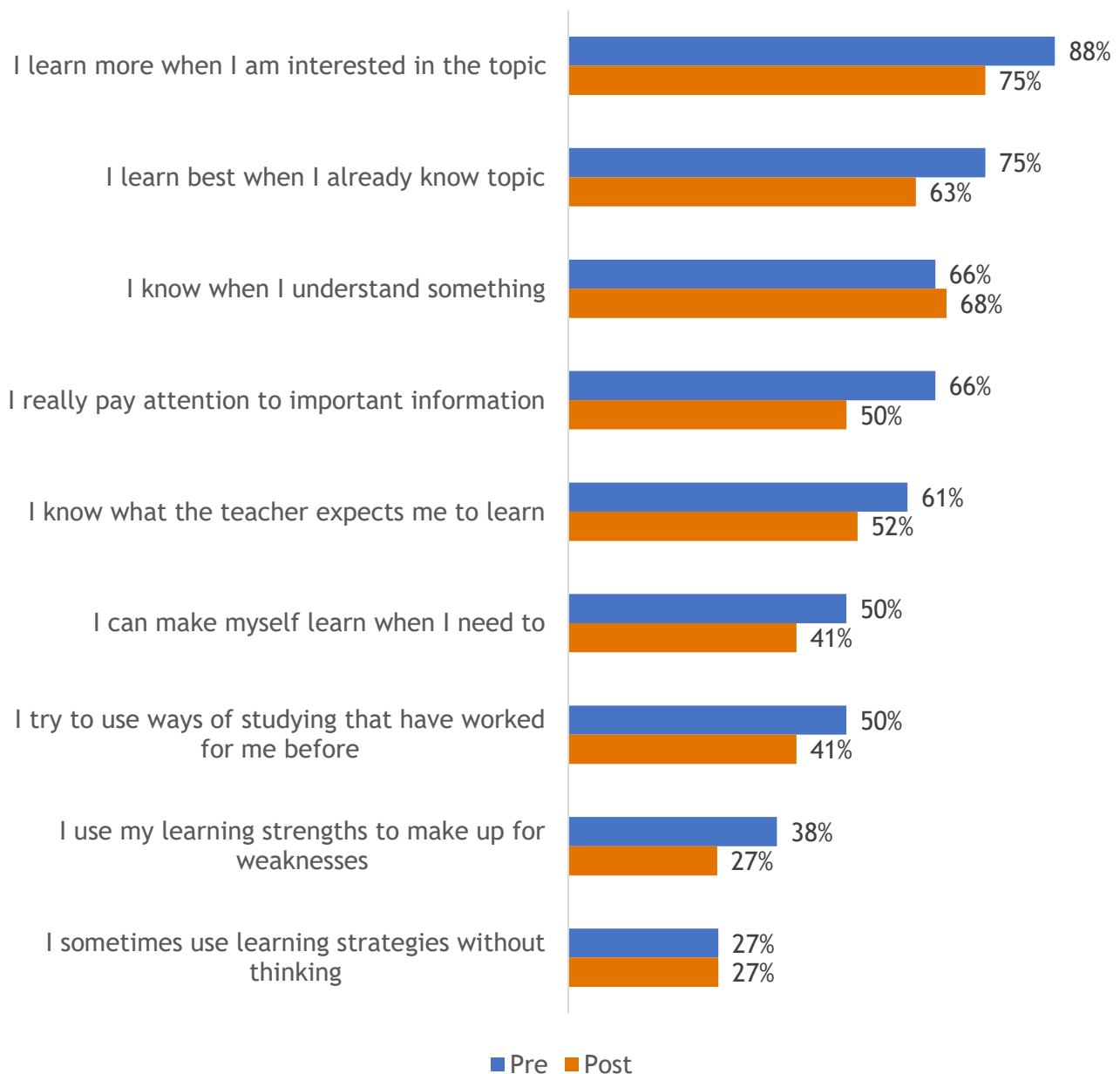
Changes in knowledge of cognition - Years 7s in the intervention school

When considering the individual items which make up the knowledge of cognition scale for year 7s, who saw a small decrease in overall average scores for this scale, there were no specific items which were significantly different. All but two items, however, did see decreases between the proportions who said they did this often or always between the two surveys, ranging from a nine-percentage point decrease to a sixteen-percentage point decrease across the seven items which declined. This may indicate that there was simply that it was a general decline in knowledge rather than it being associated with a particular area.

It is worth highlighting the two areas which did not decline. The first was the frequency in which learner's reported that they knew when they understood something and the second was that they

sometimes used learning strategies without thinking. The former increased by two percentage points whereas the latter was the same in both the pre- and post-surveys and is notably reported at the lowest frequency of all of the items.

Responses to the knowledge of cognition items among year 7s in the intervention school (proportion who reported they did this often or always). Arrows indicate significantly higher or lower responses comparing the pre-results to the post-results.



Changes in locus of control - All year groups in the intervention school

When considering both the internal and unknown loci of control together, there were decreases in all of the measures which indicated learners had an internal locus of control (though one statement was not significantly lower) and increases in three of the four measures which indicated learners had an unknown locus of control (though one statement was not significantly lower). Only one statement regarding unknown locus of control decreased, though this was not significant. This suggests that there was an impact of the workshops holistically, rather than a specific area in which it impacted.

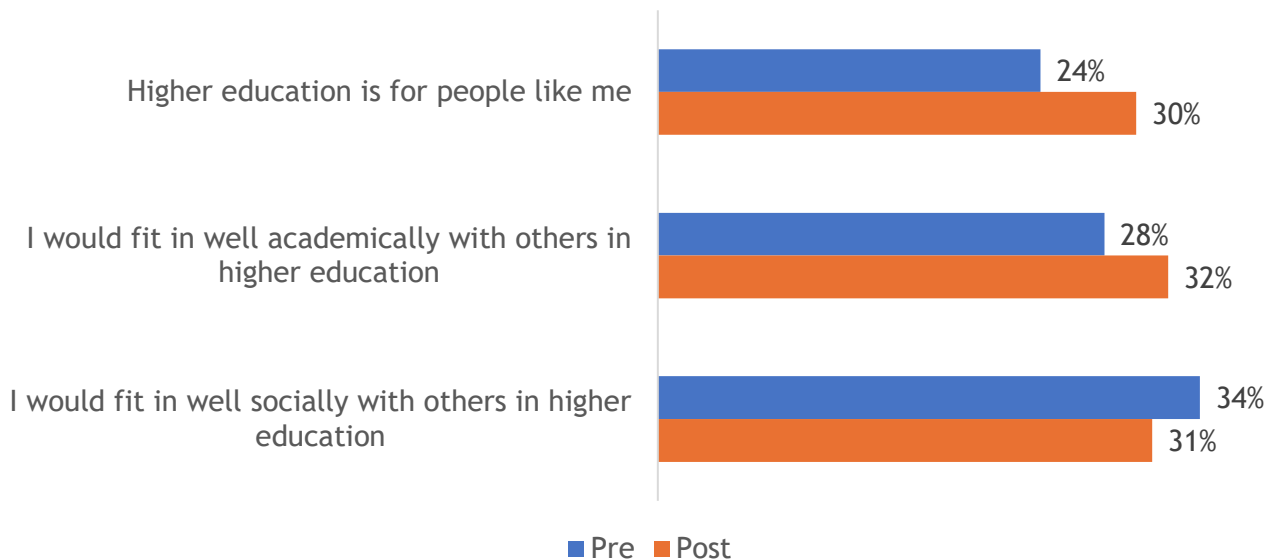
Responses to the locus of control items among all learners in the intervention school (proportion who ranked 4 or 5 out of 5). Arrows indicate significantly higher or lower responses comparing the pre-results to the post-results.



Sense of belonging - Year 7 and 8 learners in the intervention school

When responding to the individual items in the sense of belonging scale, there were no significant differences in responses which may explain why the increase in average score is negligible. Interestingly, while agreement that higher education is for people like me and that they would fit in well with others academically increased, there was a slight decrease that they would fit in well with others socially in higher education.

Responses to the sense of belonging items among year 7s and 8s in the intervention school



Demographic differences - free school meal eligibility

Learners who were not eligible for free school meals saw declines in their knowledge of cognition, though this effect was negligible ($d=0.133$) as seen in the overall sample. There were no differences observed among those eligible for free school meals; however, this group did see a marginal increase in regulation of cognition items ($d=0.197$).

As observed in the overall sample, both free school meal eligible learners and learners not eligible for free school meals declined in the internal locus of control domain and increased in the unknown locus of control domain. The decrease in the internal locus of control domain was more dramatic among those not eligible for free school meals ($d=1.078$) though it should be noted that effect among those eligible for free school meals was still substantive ($d=0.617$). This may be driven by those not eligible for free school meals demonstrating higher average scores in this domain than those who were (3.50 compared to 3.29 out of five).

Pre- and post- survey comparison among the wider sample of responses from the intervention school (eligible for free school meals only)

Group	Score Pre-	Score Post-	P-value	Cohen's D	Sample size
Knowledge of cognition	3.56	3.52			55
Regulation of cognition	2.64 ↓	2.79 ↑	0.048	0.197	52
Cognitive strategies	3.29	3.23			53
Locus of control: internal	3.29 ↑	2.77 ↓	0.006	0.605	46
Locus of control: powerful others	2.64	2.67			46
Locus of control: unknown	2.99 ↓	3.43 ↑	0.02	0.617	46
Academic confidence	2.70	2.77			52
Knowledge of higher education	3.13	3.26			52
Sense of belonging	2.83	2.83			52

Pre- and post- survey comparison among the wider sample of responses from the intervention school (not eligible for free school meals only)

Group	Score Pre-	Score Post-	P-value	Cohen's D	Sample size
Knowledge of cognition	3.70 ↑	3.62 ↓	0.03	0.133	147
Regulation of cognition	2.86	2.90			138
Cognitive strategies	3.36	2.27			140
Locus of control: internal	3.50 ↑	2.66 ↓	< 0.000001	1.078	147
Locus of control: powerful others	2.79	2.72			147
Locus of control: unknown	2.96 ↓	3.49 ↑	< 0.000001	0.632	147
Academic confidence	2.72	2.84			144
Knowledge of higher education	3.26	3.27			143
Sense of belonging	2.80 ↓	2.98 ↑	0.001	0.184	141

Demographic differences - sex

When looking at the results by sex, there were no significant differences in the knowledge of cognition item. However, males saw a small increase in their regulation of cognition ($d=0.281$). In line with the overall sample, both males and females decreased in their internal locus of control and increased in their unknown locus of control. However, males also saw a small decrease ($d=0.267$) in their belief that powerful others influence their success or failure.

Pre- and post- survey comparison among the wider sample of responses from the intervention school (males only)

Group	Score Pre-	Score Post-	P-value	Cohen's D	Sample size
Knowledge of cognition	3.65	3.58			90
Regulation of cognition	2.71 ↓	2.92 ↑	0.007	0.281	86
Cognitive strategies	3.38	3.28			83
Locus of control: internal	3.48 ↑	2.70 ↓	< 0.000001	0.99	80
Locus of control: powerful others	2.80 ↑	2.58 ↓	0.047	0.267	80
Locus of control: unknown	2.98 ↓	3.44 ↑	0.002	0.503	80
Academic confidence	2.85	2.94			87
Knowledge of higher education	3.21	3.26			86
Sense of belonging	2.74	2.88			86

Pre- and post- survey comparison among the wider sample of responses from the intervention school (females only)

Group	Score Pre-	Score Post-	P-value	Cohen's D	Sample size
Knowledge of cognition	3.68	3.61			120
Regulation of cognition	2.92	2.83			113
Cognitive strategies	3.31	3.29			117
Locus of control: internal	3.42 ↑	2.65 ↓	< 0.000001	0.938	105
Locus of control: powerful others	2.67	2.81			105
Locus of control: unknown	3.00 ↓	3.50 ↑	0.000001	0.627	105
Academic confidence	2.72	2.72			117
Knowledge of higher education	3.21	3.28			116
Sense of belonging	2.87	2.97			114

Demographic differences - ethnicity

Both learners from a White ethnic and Black, Asian and Minority ethnic (BAME) background saw similar decreases in their concept of an internal locus of control and an increase in unknown locus of control as was seen in the overall sample. There was also a small increase ($d=0.45$) in the sense of belonging item among BAME learners.

Pre- and post- survey comparison among the wider sample of responses from the intervention school (learners from a White ethnic background only)

Group	Score Pre-	Score Post-	P-value	Cohen's D	Sample size
Knowledge of cognition	3.61	3.55			178
Regulation of cognition	2.72	2.79			170
Cognitive strategies	3.28	3.20			170
Locus of control: internal	3.44 ↑	2.68 ↓	< 0.000001	0.949	159
Locus of control: powerful others	2.73	2.74			159
Locus of control: unknown	2.98 ↓	3.43 ↑	0.000002	0.527	159
Academic confidence	2.70	2.75			172
Knowledge of higher education	3.14	3.17			170
Sense of belonging	2.77	2.87			169

Pre- and post- survey comparison among the wider sample of responses from the intervention school (learners from a Black, Asian or Minority Ethnic background only)

Group	Score Pre-	Score Post-	P-value	Cohen's D	Sample size
Knowledge of cognition	3.97	3.87			34
Regulation of cognition	3.49	3.34			30
Cognitive strategies	3.74	3.69			32
Locus of control: internal	3.55 ↑	2.69 ↓	0.0006	1.039	34
Locus of control: powerful others	2.71	3.55			34
Locus of control: unknown	3.01 ↓	3.71 ↑	0.0005	0.828	34
Academic confidence	3.32	3.25			32
Knowledge of higher education	3.68	3.84			34
Sense of belonging	3.12 ↓	3.55 ↑	0.004	0.45	34

Feedback on the workshops

Impact of the workshops

Feedback from learners about the workshops was overwhelmingly positive. Learners said they enjoyed learning about new things, including learning about the brain, different learning strategies, metacognition, growth mindset and higher education. Importantly, the knowledge that learners gained helped them to understand that everyone learns differently.

“I have enjoyed learning new things about the brain and that it is normal for you not to understand things straight away or that it is normal that you won't be good at a hobby unless you practise, same with subjects.” **Year 9 learner**

“I have learnt what i need to improve on and what i need to work harder on and you can still learn thing because our brains our still growing.” **Year 9 learner**

Alongside learning about new things, learner enjoyed that this gave them the opportunity for self-reflection and to identify their strengths and weaknesses. This was further illustrated by the appreciation that learners showed that the workshops took them into account as individuals, took the time to take their interests into account, and allowed them to voice their opinions.

“I really enjoyed it because it was interactive and they took interest in OUR interests.” **Year 7 learner**

“We can share out own opinions and our personal skills. I like the surveys to also be able to share my opinion.” **Year 9 learner**

Learners recognised that the sessions had been ‘*helpful*’ for a variety of things for the future, including:

- Helping them to think about studying in a less negative light;
- Helping them to understand how to remember things more easily;
- Helping them to improve their revision;
- Improving their understanding of higher education;
- Improving their understanding of how to get the job they want;
- Helping them to explore what they want to do as a job.

While not particularly common, four learners felt that the sessions had improved their confidence:

“Becoming more confident in my work.” **Year 8 learner**

“It gave some ideas and a bit of confidence to study so I can get into higher education.” **Year 9 learner**

“Showed me options for my future, Helped understand what I need to do to get to higher education. Gave me confidence that I am at the level of higher education students.” **Year 9 learner**

“The prizes when you answer the questions because it builds confidence.” **Year 8 learner**

A small number of learners (8) did not feel there was anything to enjoy about the sessions. One learner also said:

“The first one I didn't understand why we are doing it and what we were learning about.” **Year 9 learner**

Delivery of the workshops

Again, feedback on the delivery of the workshops was overwhelmingly positive. Learners particularly valued that the sessions were interactive and enjoyed the opportunity to discuss the subject with others. The tasks were also noted as a key positive as well as the sessions on the computers. As a result, it was common for learners to say the workshops were ‘*fun*’.

“I have enjoyed being on the computers.” **Year 7 learner**

“How I was able to talk to people instead of writing.” **Year 8 learner**

“I have enjoyed talking about things such as how the brain works and about what type of learner I am.”
Year 9 learner

Young people also felt that the delivery staff were a key positive of their experience, describing them as fun, kind, and nice.

“How kind the people are and what they teach us.” **Year 8 learner**

“Very nice people and they want you to do well.” **Year 9 learner**

“How they explain and the confidence they have presenting their slides.” **Year 8 learner**

Reflections

The control sample

The challenges associated with collecting data from the control school meant that the sample sizes were much lower than originally anticipated if recruitment had happened as it was intended to. This means that it is unlikely that such a sample size is sufficient to be able to detect small to medium changes between the pre- and post- survey; the likes of which were seen in the intervention school for items relating to knowledge of cognition, sense of belonging and internal locus of control. However, it should be noted that practically, the changes observed across all scores in the control sample amounted to 0.1 or less out of an average of 5 which were lower than the change associated with significant changes in the intervention sample (ranging between 0.1 and 0.71 out of an average of 5).

Findings may also be difficult to interpret due to the lack of certainty around some of the key characteristics of the sample, in particular, the proportions who were eligible for free school meals. This is expected to be lower than the intervention sample due to differences in the populations of both schools. Had promotion of the survey gone as planned and larger sample sizes been obtained, the intention had been to match the two samples together using a propensity matching score. This would still, however, have been challenged by the fact that learners could not reliably report on whether they were eligible and there was no access to HEAT data for these learners due to not working directly with the school on an intervention. Future evaluations may need to account for the need to plan new access to learners through HEAT, however, it is noted that this may add more time and resource into an already resource-intensive process.

Year 9 comparator

As there was no year 9 comparator in the control sample, if it is not possible to ascertain a clear causal link between the intervention and changes in the scores in year 9s. However, given the lack of change in the control sample for year 7 and 8, it is reasonable to consider that a similar result could have been obtained if year 9s had been represented within the control sample. This may particularly be the case for findings around locus of control, which were mirrored across the year 7 and 8 groups in the intervention sample, indicating a consistency in experience across the year groups.

Knowledge of cognition

Given the primary objective of the intervention, in the short-term, was to increase learners' knowledge of cognition, it is initially concerning that there does not appear to be an impact on years 8 and 9s and the effect is to worsen scores of year 7s. However, given this programme is intended to be progressive in nature, it may be acceptable that a small decrease in year 7s knowledge of cognition scores occurs if it ultimately means they increase in year 8 and in year 9. Given that scores among year 8s and 9s did not change, the next step for evaluative activity may be to revisit the learners who took part in this evaluation and who take part in the same workshops next year as part of the progression of the programme.

It is also worth noting that, when considering the data from an intersectional perspective, the declines in knowledge of cognition appear to be associated solely with learners who were not eligible for free school meals. Even after declining in the post-survey, such scores were still higher among those not eligible for free school meals than they were for those who were eligible. Given free school meal eligible pupils are likely to have overall lower attainment, and the ultimate goal of the intervention is to feed into attainment raising initiatives, it is positive that this has not had decreased the knowledge of this group of learners.

Regulation of cognition

While at an overall level, there were no significant differences between the pre- and post- survey averages for the regulation of cognition scale, there were two demographic groups which did see

increases: free school meal eligible pupils and males. As males are also a target group due to lower educational attainment, this suggests some positive impact of the intervention, though it should be noted that the increases among these groups were small.

Locus of control

A decrease in internal locus of control and increase in unknown locus of control was one of the most persistent findings of this evaluation, impacting all year groups and remaining consistent even once considering intersectional characteristics. The drop in internal locus of control was particularly large across the board, which warrants further consideration given a strong internal locus of control is associated with better educational attainment (though it is worth pointing out that this did not coincide with increased external locus of control, which is associated with lower academic attainment).

When looking at the individual items relating to these, there were no specific areas across good or poor performance, or grades compared to general performance, where these increases or decreases were concentrated, indicating a holistic impact on both the internal and unknown loci of control. However, it is notable that learners' belief that good or bad teachers impacted whether they did not do well in school decreased, which is interesting to view in line with the fact that the only area that did not significantly decrease in the internal control domain was belief that if they don't do well in school, it is their own fault. This may mean that the workshops are changing perceptions more strongly regarding when learners do well, rather than when they do not do well.

When giving feedback on the sessions themselves, it was clear that learners had generally understood the purpose the session and a key positive was that they learnt more about themselves and how they could improve their work in the future. This indicated that learners had understood the content and how it applied to their futures. However, it is clear that there is a mismatch between this and how they perceive their performance compared to the effort that is required from them, which may suggest that learners then have difficulty applying what they had learned specifically to the grades and their general performance at school. Again, however, it is worth considering the progressive intention of the programme and whether revisiting the content later and reinforcing earlier ideas has a more positive impact on learners' identity.

Sense of belonging

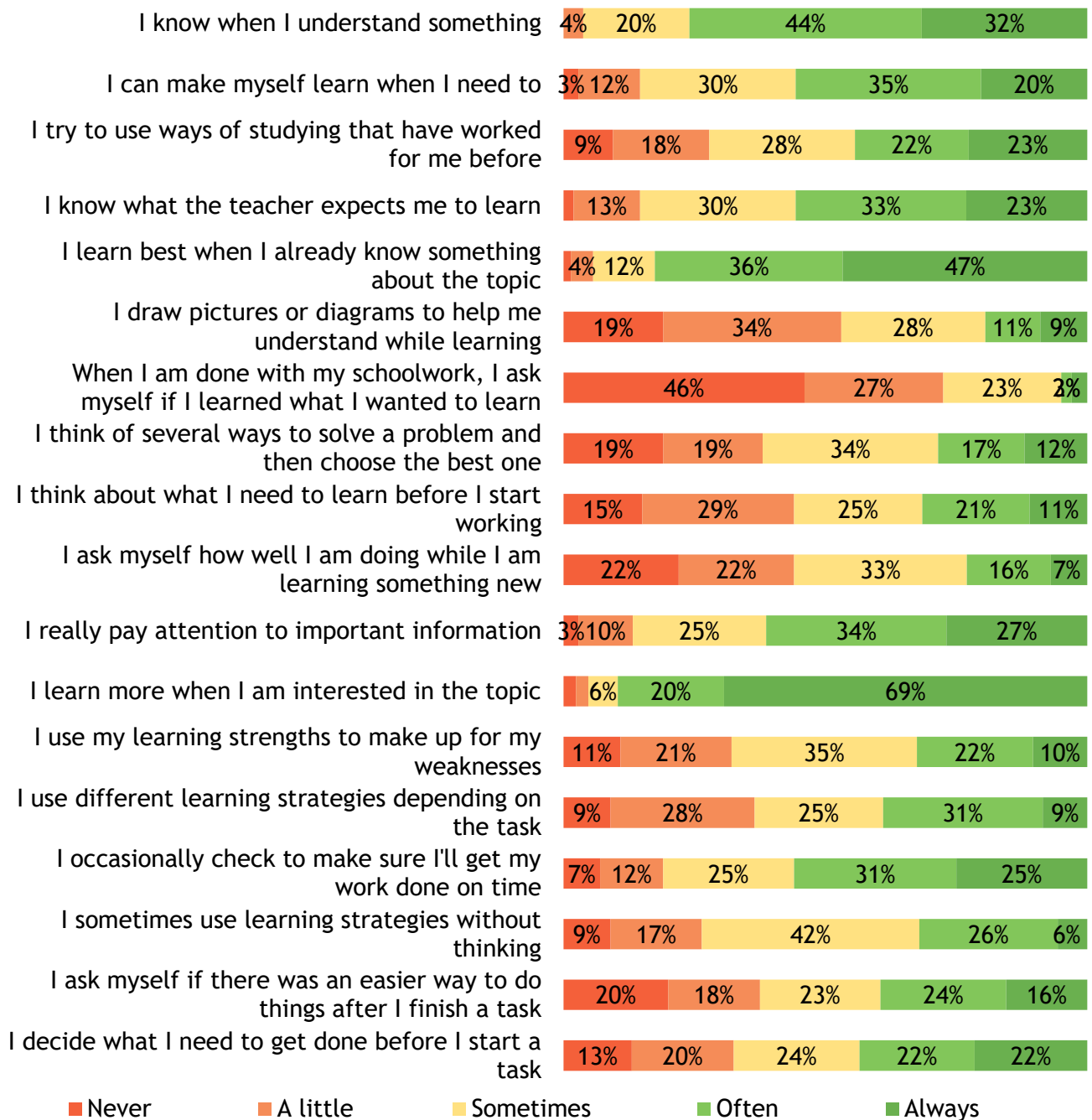
While the impact on sense of belonging was limited to years 7s and 8s, and was negligible, it should be recognised that the impact on sense of belonging on BAME learners was higher. Given this group have known barriers associated with sense of belonging in higher education, this is a positive result for the intervention. Sample sizes in this instance did not allow further investigation beyond the broad category of BAME learners, however, and it should be recognised that learners from a Black ethnic background made up a large proportion of this grouping. This means that it is not possible to attribute this impact to a specific minority ethnic group, nor is it possible to conclude that its impact is broad upon the BAME population. Future evaluations, if using similar measures, may seek to combine multiple data collection touchpoints to further interrogate this as larger sample sizes are accrued.

Appendix - full results (intervention sample)

Metacognitive self-awareness

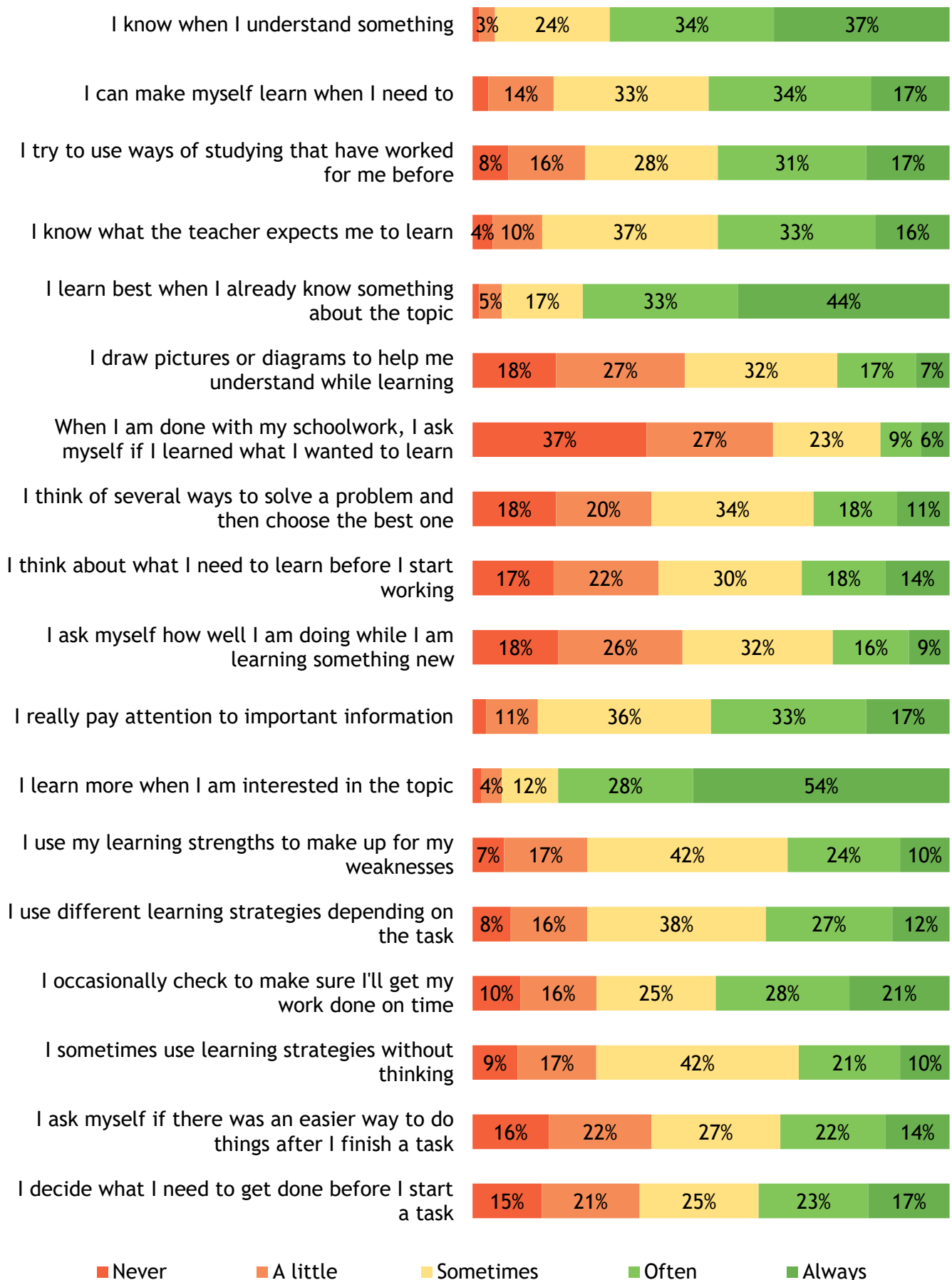
For metacognition self-awareness, the Junior Metacognitive Awareness Inventory¹ was used as a measure. This scale has two measures - Knowledge of Cognition and Regulation of Cognition. Knowledge of cognition includes knowledge about oneself as a learner, knowledge about learning strategies, and knowledge about why and when to use a given strategy. Regulation of cognition includes the ability to plan, monitor, regulate and evaluate your learning process.

Pre-survey: Junior Metacognitive Awareness Inventory scales



¹ Sperling, R. A., Howard, B. C., Miller, L. A., & Murphy, C. (2002). Measures of children's knowledge and regulation of cognition. *Contemporary Educational Psychology*, 27, 51-79. doi: 10.1006/ceps.2001.1091

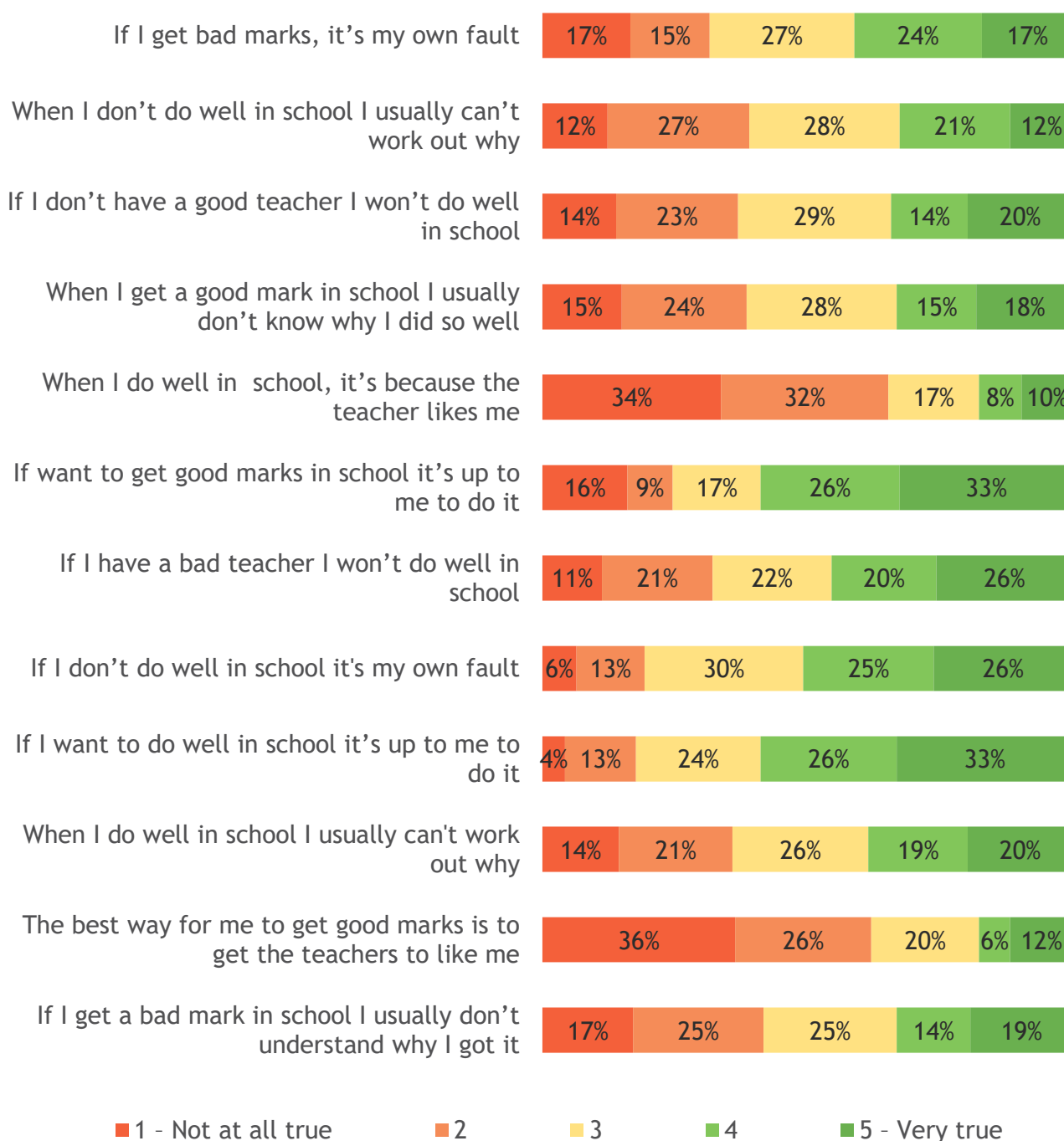
Post-survey: Junior Metacognitive Awareness Inventory scales



Locus of control

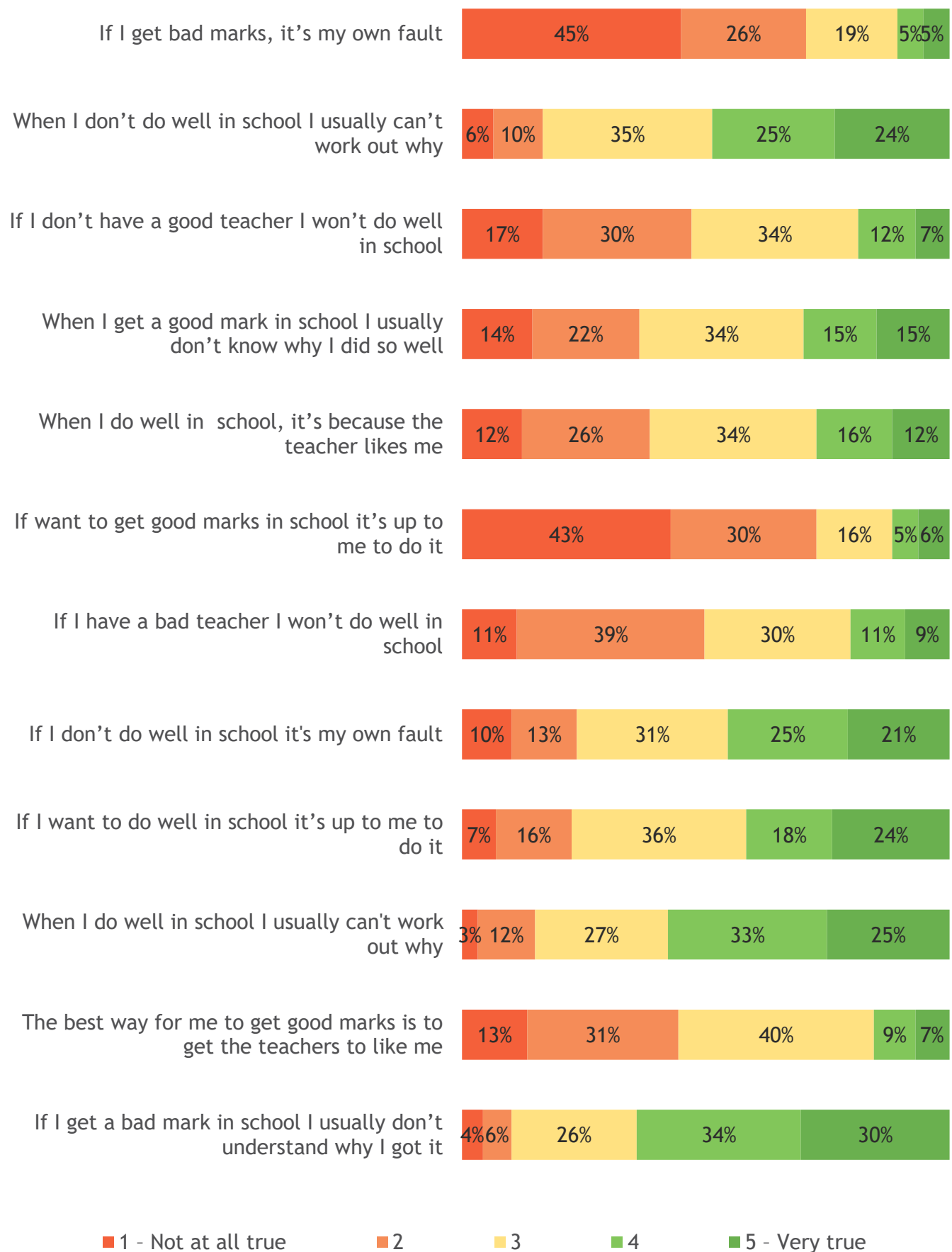
For measuring students' sense of internal locus of control, the cognitive domain items from the Multidimensional Measure of Children's Perceptions of Control² were used. This has a total of three measures, internal control, powerful others control and unknown control. An internal locus refers to an individual's judgments regarding personal control over his or her success, whereas a powerful others locus reflects judgments that the control over success is determined by significant and authoritative others, such as teachers. An unknown locus is not knowing the reasons for success and failure in school.

Pre-survey: Multidimensional Measure of Children's Perceptions of Control



² Connell, J. P. (1985). A new multidimensional measure of children's perceptions of control. *Child Development*, 56(4), 1018-1041. doi:10.2307/1130113.

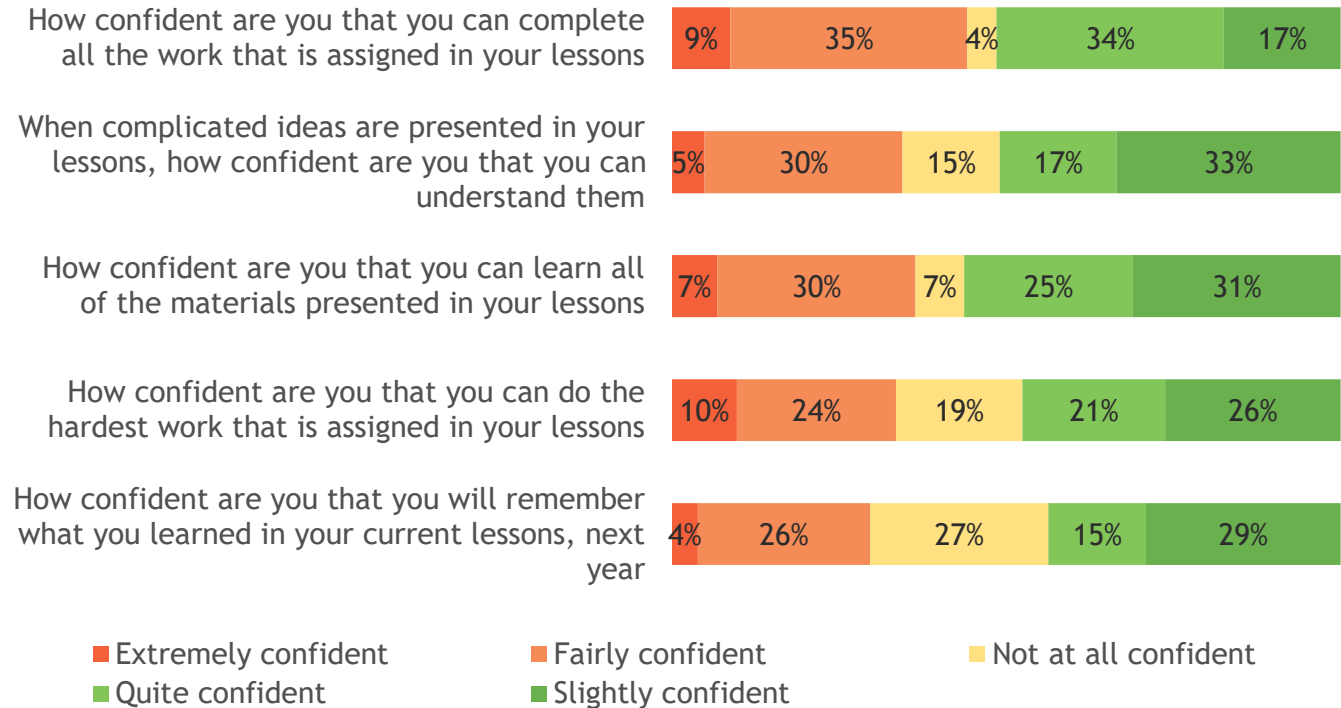
Post-survey: Multidimensional Measure of Children's Perceptions of Control



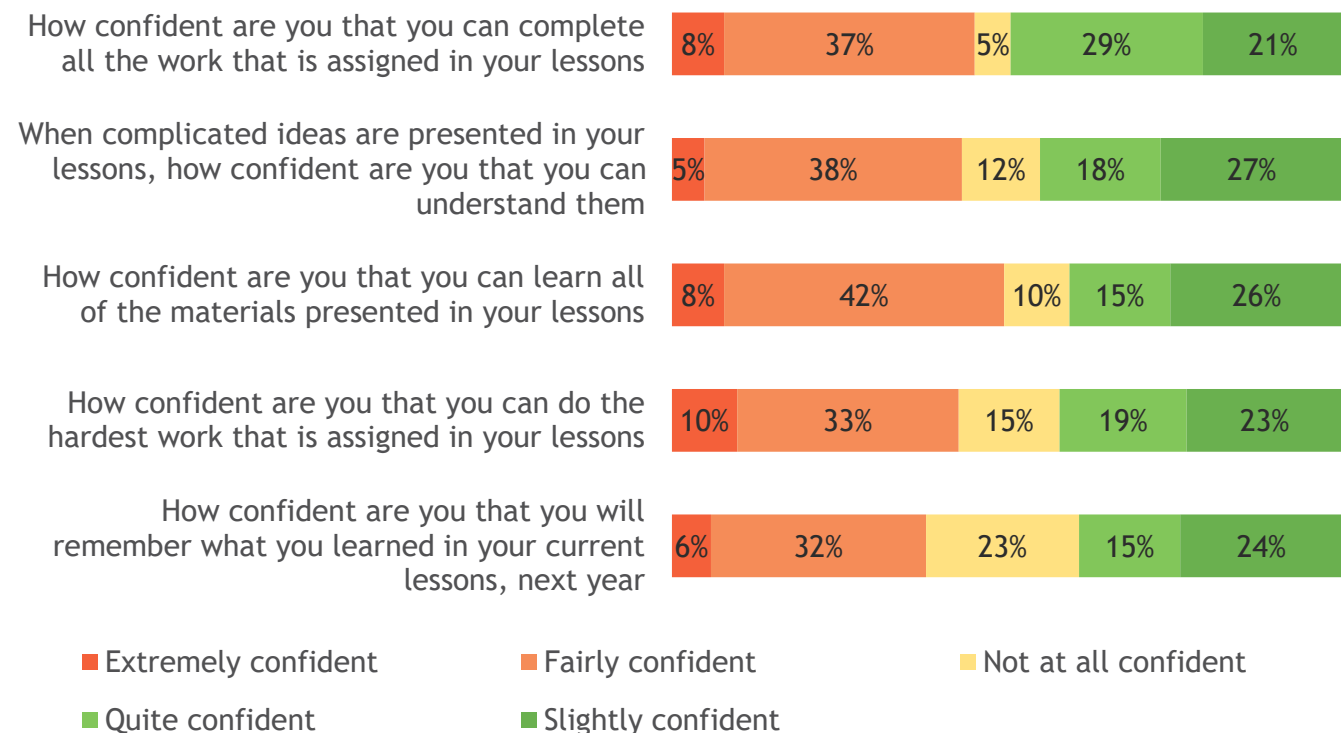
Academic confidence

To measure pupils' academic confidence to perform well, the Harvard-Panorama Student Perception Survey was used. This includes the educational self-efficacy scale. Educational self-efficacy is a student's general sense that they can achieve academic outcomes.

Pre-survey: Harvard-Panorama Student Perception Survey



Post-survey: Harvard-Panorama Student Perception Survey

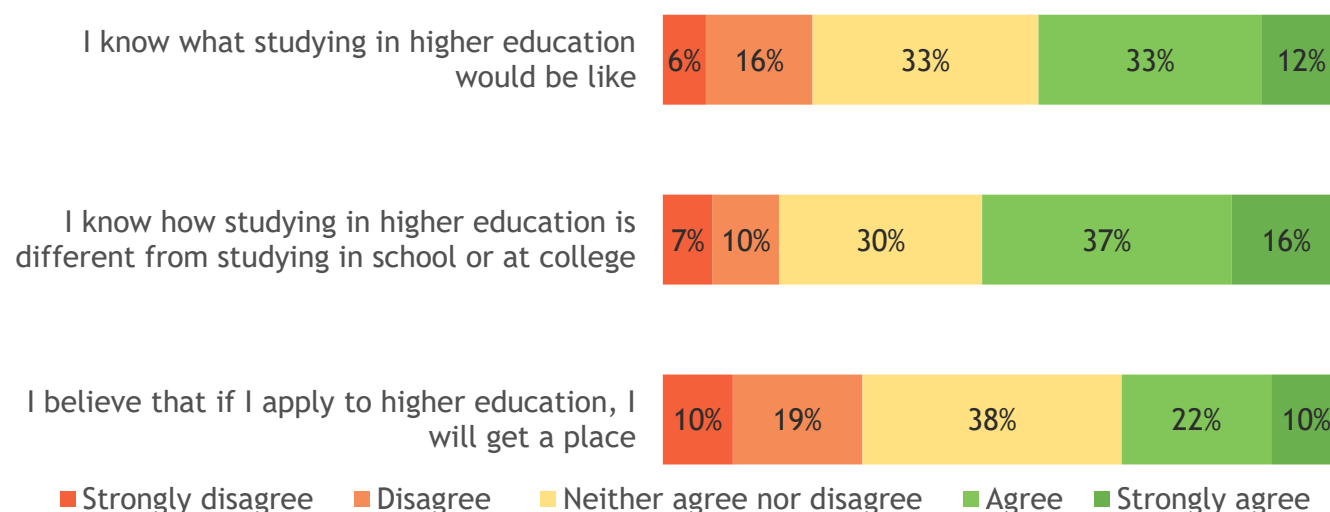


Higher education progression

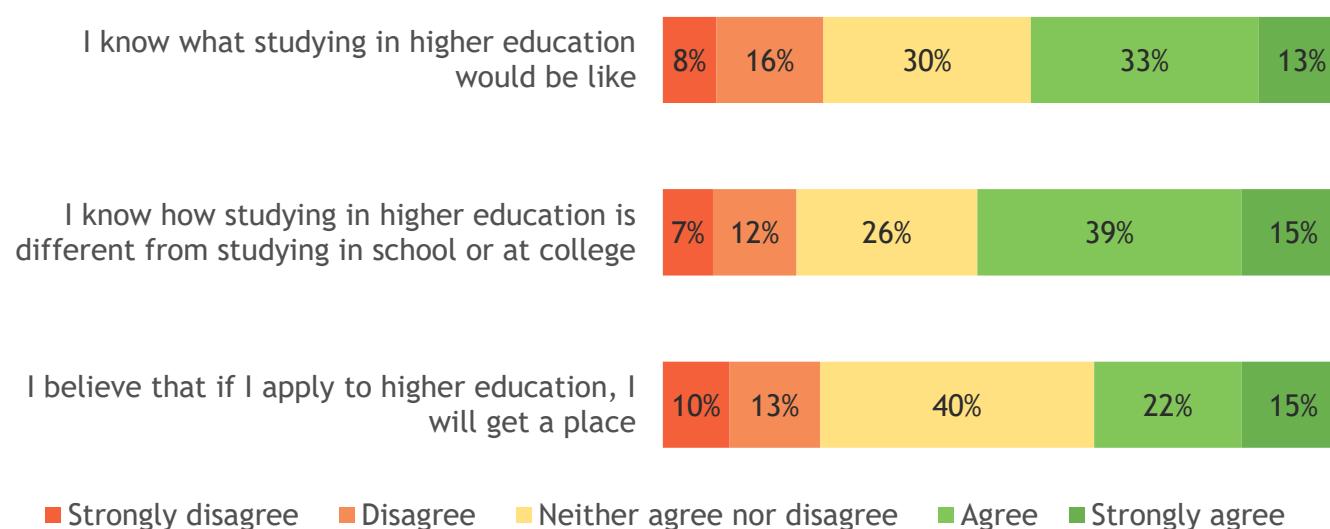
To measure pupils' awareness and understanding of Higher Education, a number of scales from TASO's Access and Success Questionnaire (ASQ) were used:

- Knowledge and understanding - Individuals' knowledge about obtaining a place in higher education and what studying there might be like (knowledge of higher education scales).
- Sense of belonging - The extent to which individuals think they would feel connected to the higher education environment, peers, and others, if they were to progress to higher education (sense of belonging, access/pre-entry scales)
- Intention - The extent to which individuals expect to go to higher education (higher education expectation scale).

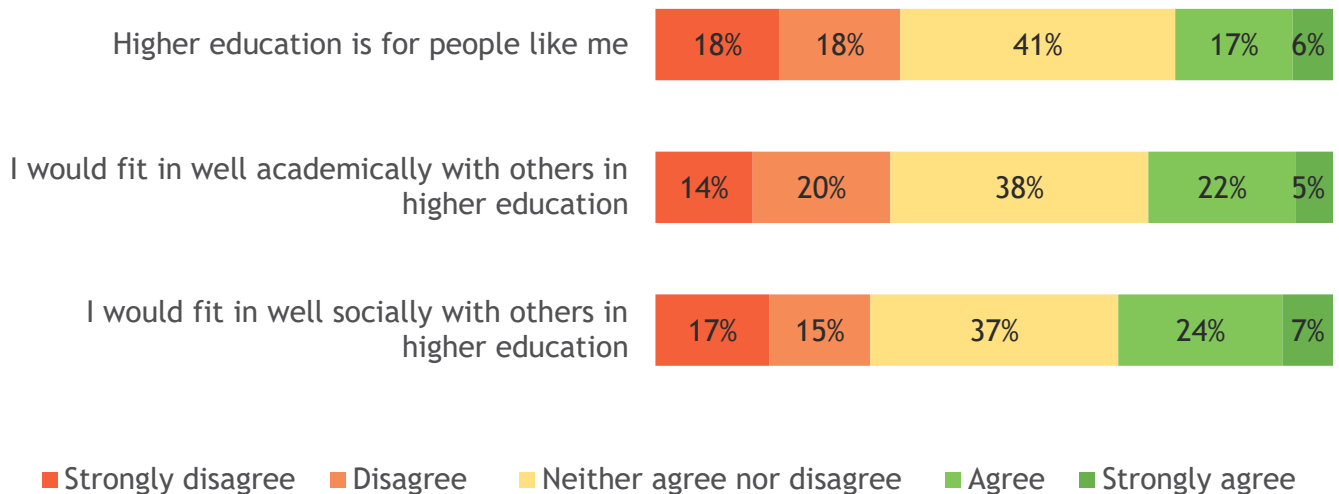
Pre-survey: Knowledge of higher education



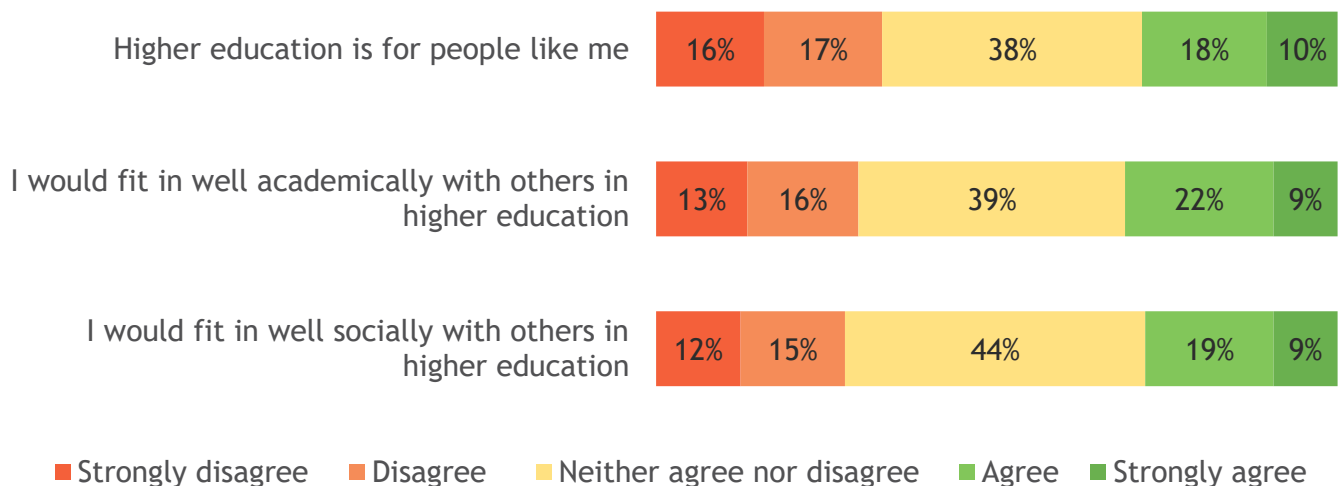
Post-survey: Knowledge of higher education



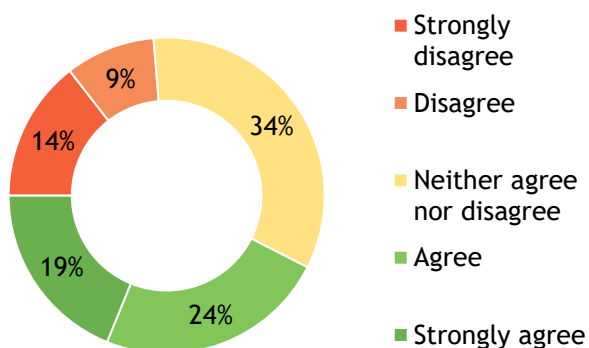
Pre-survey: Sense of belonging in higher education



Post-survey: Sense of belonging in higher education



Pre-survey: higher education expectation



Post-survey: higher education expectation

