



Think and Go Higher: 2023/24 Impact Evaluation

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A Go Higher West Yorkshire Evidence Report

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This report is number 2 in a series on the Think and Go Higher metacognition-based attainment raising programme. Previous reports in the series can be found on the GHWY website and are as follows:

- Evaluation of Think and Go Higher: A Metacognition-based Attainment Raising Programme (October 2023) [\[link\]](#)

Abstract

In 2023/24 Go Higher West Yorkshire (GHWY) delivered a second iteration of the Think and Go Higher Programme, a metacognition-based attainment raising initiative. Evaluation of the programme supports the value of metacognition programmes such as this one, as impact was observed in all intended outcomes, particularly those that are taught most explicitly. The programme is designed to be repeated across three years, with learners who were taking part for the second time stating that repeating the programme helped them to reinforce their learning. The final session takes place on an HE campus, and learners highlighted this as a source of inspiration and academic motivation. Additionally, some differences were found in impact between different ethnic groups and different age groups. Going forwards, outreach practitioners should consider more explicit ways of teaching all aspects of metacognition, as well as consider how the programme could be adapted to ensure all learners are equitably benefitting from taking part.

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Executive Summary



Think and Go Higher: Impact Evaluation 2023/24

Evaluation of the second iteration of GHWY's metacognition based attainment raising programme

Background

Whats the project all about?

An interactive six session programme designed to improve learners' metacognitive skills as a proxy for raising their attainment, delivered to learners in Years 8, 9 and 10.

Why will this work?

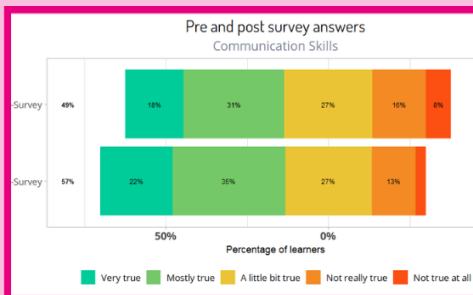
Metacognition programmes are a high-impact, low-cost approach to attainment raising.¹

Sustained interventions are the most effective forms of outreach.²

The pilot version of the programme showed modest improvements.³

- 1 Learners' **metacognitive** skills were significantly improved
- 2 Outcomes differ significantly based on broad **learner ethnicity categories**
- 3 **Older learners** may benefit more than younger learners
- 4 **Repeating the programme** helped learners to reinforce their learning
- 5 Visiting an HE campus was a **valuable source of inspiration** for many learners
- 6 Learners value **collaboration and develop empathy**

Findings



There was a particularly clear positive impact on **communication skills**.

"It helps you get your point across, but also understand other people's opinions."

- Think and Go Higher Participant

Recommendations

- 1 Consider **more explicit approaches** to teaching metacognition
- 2 Maximise opportunities for learners to **collaborate and support each others** communication in the classroom
- 3 Prioritise opportunities for older learners **approaching their GCSEs** to develop their metacognitive skills
- 4 Investigate why metacognitive outcomes may differ based on broad learner ethnicity groups
- 5 Recognise the connection between a learners interest in **HE progression and academic motivation**

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1. Quigley A et al. Metacognition and self-regulated learning: Guidance report. 2021.
2. MIME Consulting, Smith, SE. HESA Report 2022/23.
3. Aldridge N et al. Think and Go Higher: A Metacognition-based Attainment Raising Programme. 2023

p<0.05 was used as the threshold for statistical testing throughout.



Introduction to Go Higher West Yorkshire and Uni Connect

Go Higher West Yorkshire (GHWY) is a partnership of 13 higher education (HE) providers across West Yorkshire which seeks to reduce inequalities in HE access and success. This is facilitated by a dedicated central team of staff who enable collaboration in relation to county-wide widening participation initiatives and members' access and participation plan (APP) and statement (APS) activity. Each HE provider subscribes to Go Higher West Yorkshire as a member institution.

Our 13 HE members are:

- Bradford College
- University of Bradford
- University Centre Calderdale College
- University of Huddersfield
- Kirklees College
- Leeds Conservatoire
- University of Leeds
- Leeds Arts University
- Leeds Beckett University
- Leeds College of Building
- University Centre Leeds
- Leeds Trinity University
- University Centre Wakefield College (Heart of Yorkshire)

GHWY delivers the Uni Connect programme in West Yorkshire. Uni Connect is the national programme through which higher education providers work together, and with partners, to improve equality of opportunity in access to higher education. Funded by the Office for Students (OfS) since 2019, Uni Connect is the latest in a series of nationally funded 'collaborative outreach' programmes that have operated in England since the early 2000s (1).

As an organisation we work closely with schools, local authorities, employers and the West Yorkshire Combined Authority to enable true collaboration.

To find out more about our collaborative initiatives, current projects and strands of work, including the Uni Connect Programme, please visit our website: www.gohigherwestyorks.ac.uk.

You can also follow us on [LinkedIn](#) and on X @GoHigherWY.

Introduction to the Think and Go Higher Programme

From the 2022/23 academic year, the Office for Students (OfS) introduced attainment raising activities as a core part of the Uni Connect programme, specifically for Key Stage 3 and 4 learners in schools (2). This strategy was based on evidence that socioeconomic differences in university attendance are driven by differences in attainment at 16 (3). In that year, GHWY delivered a pilot version (4) of a sustained, metacognition-based attainment raising programme. Based on available evidence and local context, it was established that this approach would be both most effective and well received in West Yorkshire (5–8). In 23/24, that programme was delivered for a second time.

Metacognition is the concept of an individual understanding their own cognitive processes, or in other words, learning about how they learn. It is well established that good metacognitive skills are linked to increased attainment (9,10), and that interventions teaching metacognition can be an effective way to raise attainment (11). In addition to metacognition, the programme also focuses substantially on oracy and communication skills, which are also associated with increased attainment (12) and which are closely linked to cognition. There is particular local demand for oracy provision, with teachers in Yorkshire and the Humber more likely than teachers in other regions to state that oracy skills are particularly important for learners who are socioeconomically disadvantaged or who have low prior attainment (13). One framework for teaching oracy describes one of four strands as ‘cognitive oracy’ (13), including the structure and organisation of speech, the ability to seek information and clarify through questioning, summarising, giving reasons to support views, and critically examining ideas and views. It is around these concepts, where oracy skills meet cognition and metacognition, that much of the Think and Go Higher Programme is based.

Building on the successes of the pilot programme the previous year, the programme was delivered by GHWY Outreach Officers, supported by Student Ambassadors, in a total of 8 schools across West Yorkshire. The programme was delivered separately to years 8, 9 and 10, either during the school day or after school, and consisted of 6 sessions with the first five sessions being held in school, and the final session being a campus visit – to a further education setting for year 8s, or to a higher education setting for year 9s and 10s.

The programme builds upon the successes and recommendations from the pilot programme (4), and again consists of 6 sessions (see Appendix A for more details):

Session 1: Go Connect

Session 2: Go Analyse

Session 3: Go Debate

Session 4: Go Collaborate

Session 5: Go Present

Session 6: Go Visit

The programme is designed to be progressive, with each session building on previous sessions and each year group builds on what learners have learnt in previous years of the programme. As this is the second iteration of the programme after the pilot year, it is the first time that some learners had the opportunity to participate in the programme for a second time.

A total of 711 learners took part across the whole programme. Only specific learners were eligible to take part in the programme, based on identified risks to equality of opportunity in West Yorkshire. Therefore, 35% had a Black, Asian, or Minoritised Ethnic background, 0.4% had experience of local authority care, 29% were males eligible for free school meals, and 15% were disabled. All were from Uni Connect eligible postcodes, with 79% in POLAR quintile 1 and 17% in POLAR quintile 2. There was an even gender balance.

Changes and reflections since the pilot evaluation report

The Think and Go Higher programme ran as a pilot in 2022-23, and the associated evaluation report was published in October 2023. The pilot evaluation found modest indication of emerging impact and made some initial recommendations to improve both delivery and evaluation of the programme.

Improvements to the evaluation of the programme would make the emerging indication of impact possible to substantiate in future years; the required changes related to some logistical inconsistencies which were addressed. Further to this, plans to measure long-term attainment outcomes were set in motion, with the creation of a matched cohort to form a control group. The results of these long-term methods will not be reportable until after participating learners take their GCSEs. For the first cohort who took part in Year 10 only, GCSE results will be reportable in the 2024/25 evaluation report. GCSE results for the first fully sustained cohort (to have participated in the programme for three consecutive years) will be reportable in 2026/27.

The following table shows the delivery-focused recommendations made in the previous report, and some changes made accordingly:

Recommendation	Changes made
1. Ensure learners understand the purpose and potential applications of metacognitive skills they are introduced to.	All session content was assessed for its applicability to the intended outcomes of the programme. Any content not deemed to support programme objectives was removed.
2. Provide opportunities for learners to practice their new skills through collaboration and creativity, potentially outside of the classroom where possible.	A content reshuffle led to the creation of a new session, 'Go Present'. This gave learners opportunity to focus on their collaboration and communication skills in a structured context, building up to further presentation opportunities in the final session on a HE campus, 'Go Visit'.
3. Encourage metacognitive practice from the start by guiding learners to self-reflect on their baseline and post-programme behaviours and skill and confidence levels.	Critical reflection time was incorporated into sessions, with facilitators supporting learners to develop full understanding of the questions being asked in surveys, often in creative ways.

Intended programme outcomes

Programme mission

To increase the attainment of our target learners via development of their metacognitive skills. We want to improve metacognitive skills which focus on processes used in planning, monitoring, critical thinking, communicating knowledge and applying logic, resulting in learners being more effective and efficient in their learning. The outcome of improving these skills will result in improved attitudes to learning and academic self-efficacy, which will increase attainment amongst target learners.

Intermediate outcomes:

Intermediate outcomes have been measured via pre and post surveys and focus groups with participating learners.

Increased understanding of own cognition

After taking part in the Think and Go Higher Programme, learners should have an increased understanding of their own cognition and thinking – their strengths and weaknesses, including how to assess what they have understood in class and what they have not understood. This will help them to identify what parts of their schoolwork they need to focus on to ultimately increase their attainment.

More internal locus of control

A learner's locus of control determines how in control of their life they feel, and is measured on a scale from internal (a learner feels that their life is controlled entirely by their own choices and decisions) to external (a learner feels that their life is entirely controlled by external factors and influences that they have no power over). A more internal locus of control is linked to increased academic achievements as learners are more likely to feel they can take control of their learning (14).

Whilst locus of control is not directly taught in the Think and Go Higher Programme, it is expected that by taking part in the programme, learners may gain some experience of setting goals and then achieving them, or trying something they don't feel confident about and succeeding, and this may lead indirectly to a more internal locus of control.

Increased communication skills

Oracy is essentially communication skills, particularly supporting learners to express themselves in speech and to articulate their thoughts out-loud. There are links between oracy and metacognition, and both have been seen to increase attainment.

Increased metacognitive monitoring and regulation skills

This is about learners' ability to assess their learning: to know whether they have understood something and identify when there are deficits in their understanding (called monitoring) and to take action to remedy those deficits eg by asking for help or trying a different strategy (called regulation)- these are metacognitive strategies. It also includes their ability to prepare to do work – eg by planning and scheduling, time management, and setting realistic goals. Examples of these strategies are using teacher or peer feedback to improve their work, checking back over their work, or asking for help when they need it.

Increased knowledge of study and learning strategies

During the programme the learners will learn specific study skills and tools that they can apply to their schoolwork and revision.

Increased use of cognitive strategies

Whilst taking part in the programme, learners will learn about cognitive strategies that they use to learn, such as elaboration-based strategies, that is, making connections between present and previously learned information, and organisation-based strategies, that is, selecting, reordering, or summarising important information.

Long-term outcomes

Long-term outcomes will eventually be measured by assessing learners' GCSE attainment and ultimately their progression into HE.

Increased attainment

Learners will be able to use the skills learnt in the programme to learn and study more effectively, leading to increased attainment at KS4.

Increased progression to HE

Increased attainment will ultimately allow learners to access HE in a way that may not have been possible with lower grades. The inclusion of a campus visit, a potential positive experience of visiting an HE environment, may also support learners' attainment as a result of increased motivation to access HE.

Evaluation methods

This impact evaluation utilised qualitative and quantitative methods to measure impact against the intermediate intended outcomes of the Think & Go Higher programme. See Appendix B for more details about the evaluation design and data analysis. See Appendix C for full details of the pre and post learner survey designed for this specific programme.

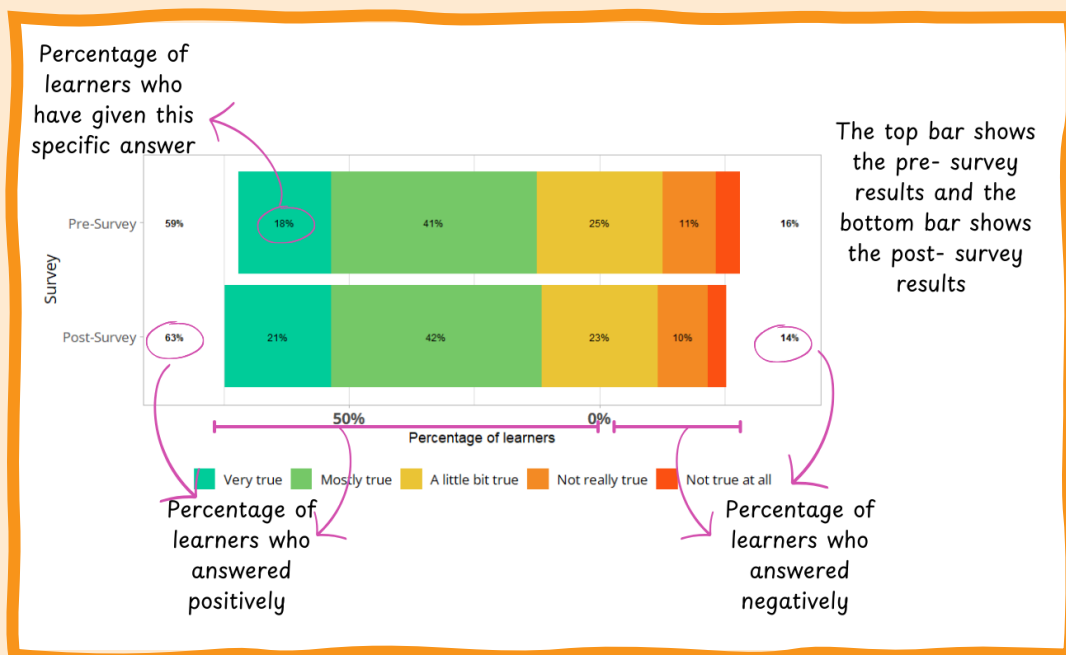
Progress towards long-term outcomes is not yet reportable and is therefore not included in this report.

Findings

Interpreting graphs & findings

In the graphs in this report, the x axis shows the percentage of learners who have answered positively (to the left of 0%) and the percentage of learners who have answered negatively (to the right of 0%). When the questions were phrased negatively (ie, to give a negative answer shows movement towards the answer) the results have been reverse coded so that all responses follow the same pattern.

In each graph, the top bar shows the pre survey results and the bottom bar shows the post survey results. A shift to the left, towards the green, therefore shows progress towards the outcome.



P values

Statistical testing generates a p-value that tells us the probability that we would get these results if there was no difference between the two groups – in other words, if the programme had had no impact. So, when a p value of 0.05 is given, it means there is a 5% probability of this happening if there was no impact, and when a value of 0.01, this means a 1% probability. Given that it is so unlikely to happen if there was no difference between the two groups, we can therefore assume, that there is a difference – in other words, that taking part in the programme has had impact.

The threshold for statistical significance is usually $p < 0.05$ – so when a result is called significant, it means that there is a less than 5% probability that it could've happened by chance.

Overall Impact

KEY FINDING: learners' metacognitive skills were significantly improved after taking part in the Think and Go Higher Programme

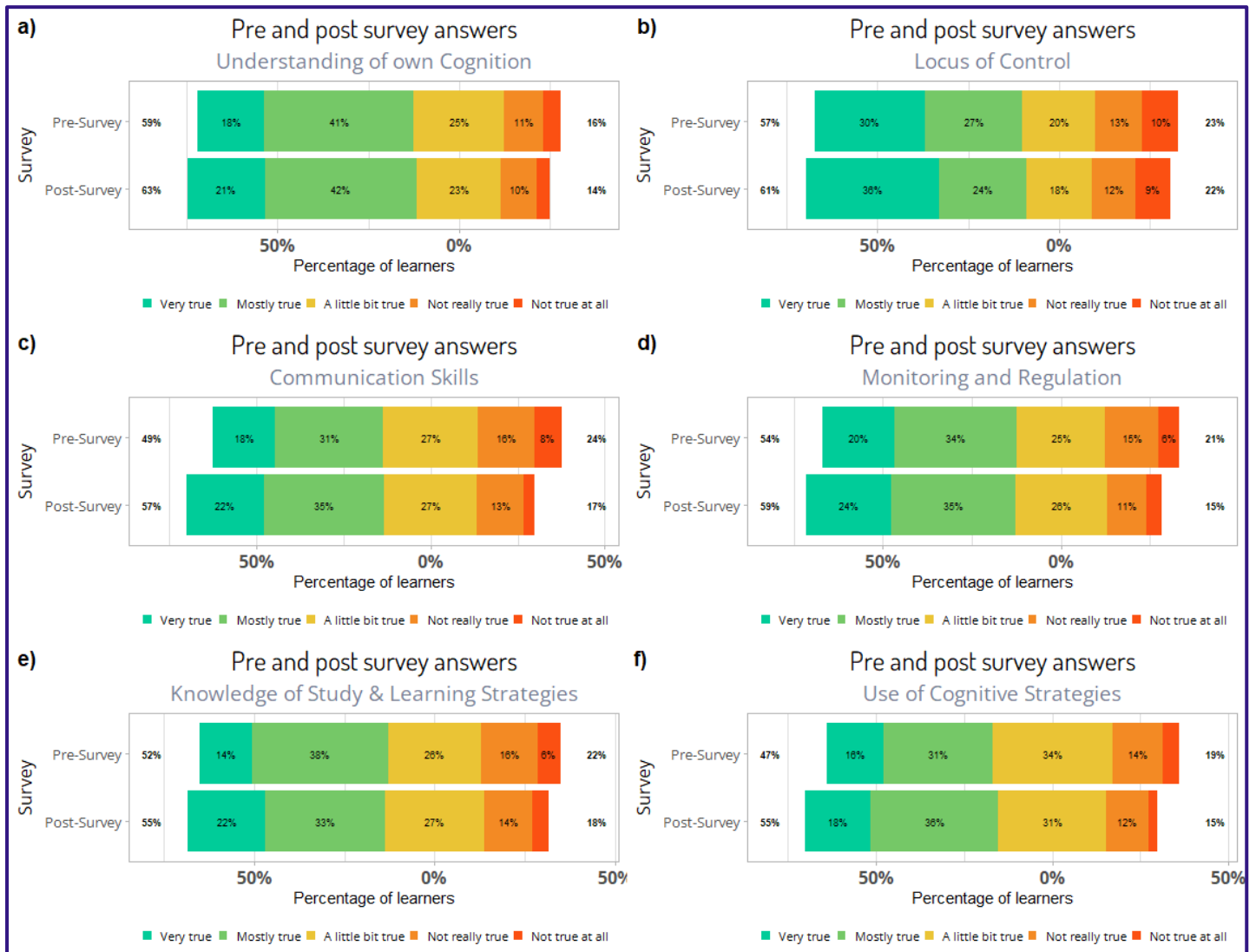


Figure 1 Pre- and post-programme survey results. Learners were asked to fill in a survey before and after taking part in the Think and Go Higher Programme. a) responses to questions on the topic of 'understanding of own cognition'. There was a significant difference between the pre and post survey answers in this section ($p < 0.05$, $n = 800$), b) responses to questions on the topic of 'locus of control'. There was a significant difference between the pre and post survey answers in this section ($p < 0.01$, $n = 1214$), c) responses to questions on the topic of 'communication skills'. There was a significant difference between the pre and post survey answers in this section ($p < 0.01$, $n = 735$), d) responses to questions on the topic of 'monitoring and regulation'. There was a significant difference between the pre and post survey answers in this section ($p < 0.01$, $n = 921$), e) responses to questions on the topic of 'knowledge of study and learning strategies'. There was a significant difference between the pre and post survey answers in this section ($p < 0.01$, $n = 672$), f) responses to questions on the topic of 'use of cognitive strategies'. There was a significant difference between the pre and post survey answers in this section ($p < 0.01$, $n = 622$).

Before and after taking part in the programme, learners answered a survey that included questions on the different aims and intended outcomes of the programme. Questions on learners' understanding of cognition included:

- their understanding of their strengths and weaknesses
- understanding when they had understood a concept they were learning about in class

- their ability to recognise which parts of their understanding needed more work.

When analysed altogether, learners were significantly more likely to answer these questions more positively after taking part in the programme ($p < 0.05$). Before taking part in the programme, 59% of learners answered 'very true' or 'mostly true' to these questions, and after taking part, this figure was 63%.

The survey also included questions designed to assess learners' locus of control, with a more internal locus of control suggesting they felt more in control of what happens in their life, and a more external locus of control suggesting they feel at the mercy of outside factors. When analysed altogether, learners were significantly more likely to answer these questions suggesting an internal locus of control after taking part in the programme ($p < 0.01$). Before taking part in the programme, 57% of learners answered 'very true' or 'mostly true' to these questions, and after taking part, this figure was 61%.

“You'd kind of be like thinking outside of the box as well, because you've got to think further and you've got to think more deeper with it.”

“It helps you get your point across, but also understand other people's opinions.”

The next part of the survey included questions on learners' self-assessment of their communication skills, which were explicitly addressed in the programme. These included presentation skills and debating skills. When analysed all together, learners were significantly more likely to assess themselves more positively after taking part in the programme ($p < 0.01$). The impact of the programme in this section is particularly visually striking (see Fig. 1c), with 49% of learners answering these questions with 'very true' or 'mostly true' before taking part in the programme, and 57% afterwards. Further to this, an interview with a programme facilitator outlined the need for many tools and

techniques being taught in the programme to become more embedded in everyday learning in the classroom; they perhaps need to become as explicit and familiar as communication skills to become even more impactful on learners.

The survey also included questions on learners' monitoring and regulation skills, including checking over their work, and asking for help when needed. When analysed all together, learners were significantly more likely to assess their skills positively after taking part in the programme ($p < 0.01$). Before taking part in the programme, 54% of learners answered 'very true' or 'mostly true' to these questions, and after taking part, this figure was 59%.

Questions about learners' study and learning strategies were particularly about how learners find and use learning strategies that work for them (as opposed to about the specific learning strategies themselves). When analysed all together, learners were significantly more likely to answer these questions more positively after taking part in the programme ($p < 0.01$). Before taking part in the programme, 52% of learners answered 'very true' or 'mostly true' to these questions, and after taking part, this figure was 55%.

Finally, the survey included questions on learners' use of cognitive strategies, such as:

- whether they reorganise schoolwork in order to understand it better (i.e. organisation-based strategies)
- whether they find links between information they learn in different lessons (i.e., elaboration-based strategies).

When analysed all together, learners were significantly more likely to answer these questions positively after taking part in the programme ($p < 0.01$). Before taking part in the programme, 47% of learners answered 'very true' or 'mostly true' to these questions, and after taking part, this figure was 55%.

In focus groups, learners frequently highlighted improvements in their approach to assessed work and their ability to think and write more logically. They demonstrated a good understanding of how to apply the cognitive strategies learnt in the programme during tests and classwork.

Further to this, many learners stressed the perceived importance of the skills learnt in the programme, including the ability to think deeply, analyse and expand on points being made.

Differences in impact by eligibility criteria

“[The programme] does help you think more logically about the answer you're writing down. If you didn't have it, you'll probably get a less logical and explained answer.”

KEY FINDING: metacognition outcomes differ significantly based on very broad learner ethnicity categories

Specific demographic groups who are underrepresented in higher education were prioritised for participation in the Think and Go Higher Programme, including Black, Asian and Minoritised Ethnic learners, disabled learners, and males on free school meals. Survey responses for each of these groups were compared to survey responses from learners not in these groups. Learners with experience of local authority care were also prioritised for participation, but this comparative analysis was not conducted for this group due to low numbers of participants.

Across several of the cognition-based outcomes assessed in the learner survey, the initial baseline scores and the post-programme impact differed significantly between Black, Asian, and Minoritised Ethnicity learners, and learners with a White ethnic background. These broad ethnicity categories have been prioritised for analysis (with a particular focus on the experience of Black, Asian and Minoritised Ethnicity learners) to align with the eligibility criteria of the Think and Go Higher programme. However, we recognise that this may mean nuance within ethnicities is lost in this analysis. Analysis which is disaggregated into more ethnicity categories has not taken place due to low numbers of learners in some groups.

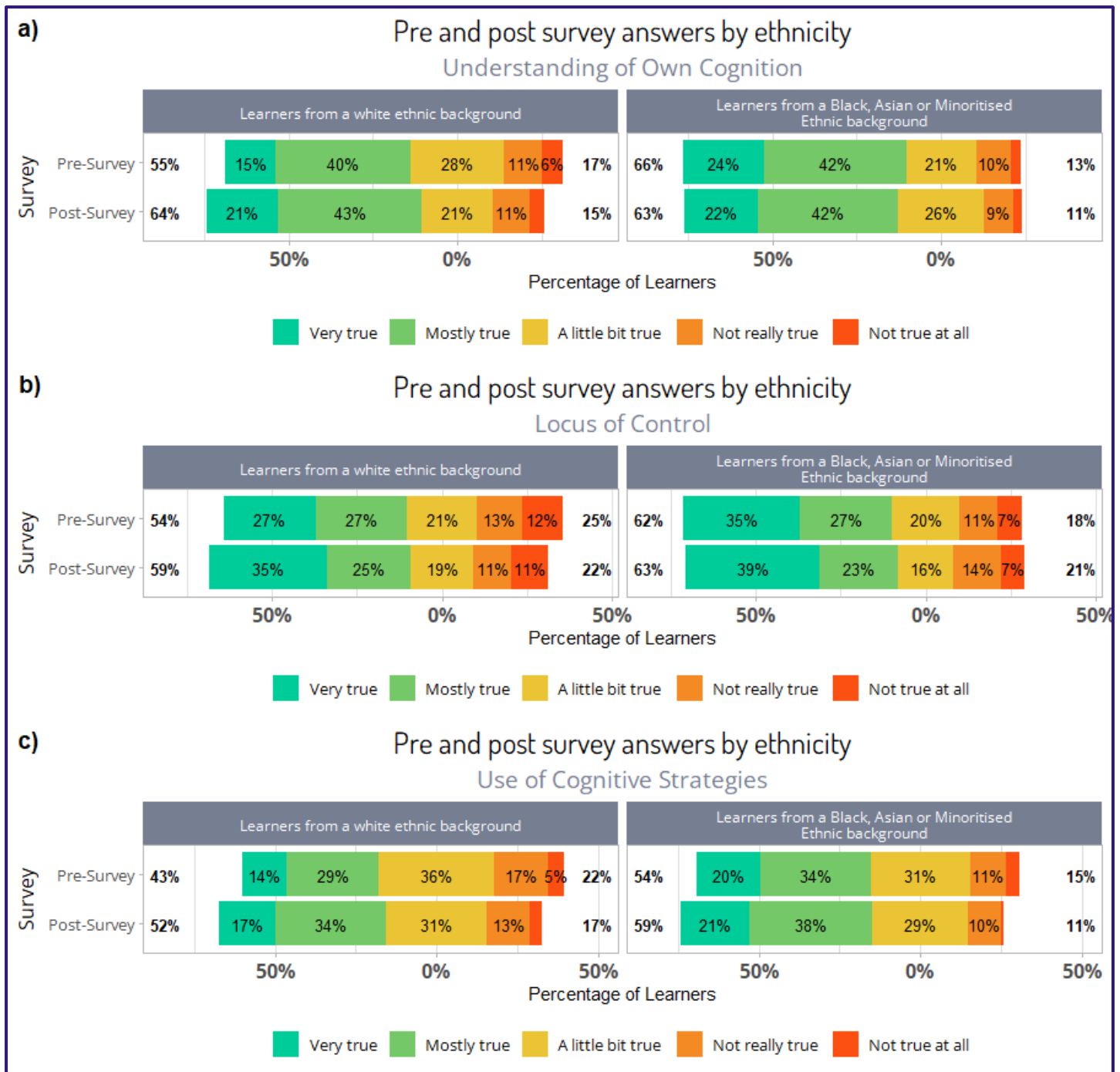


Figure 2 Pre- and post-programme results by ethnicity. Learners were asked to fill in a survey before and after taking part in the Think and Go Higher Programme. a) responses to questions on the topic of ‘understanding of own cognition’ from learners with a white ethnic background (left, n=472) and learner from a Black, Asian or Minoritised Ethnic background (right, n=313). Learners from a Black, Asian or Minoritised Ethnic background started the programme with a significantly better understanding of their cognition compared with their white peers ($p < 0.01$) but make significantly less progress over the course of the programme towards this outcome ($p < 0.01$). b) responses to questions on the topic of ‘locus of control’ from learners with a white ethnic background (left, n=763) and learner from a Black, Asian or Minoritised Ethnic background (right, n=433). Learners from a Black, Asian or Minoritised Ethnic background started the programme with a significantly more internal locus of control compared with their white peers ($p < 0.01$) but make significantly less progress over the course of the programme towards this outcome ($p < 0.05$). c) responses to questions on the topic of ‘use of cognitive strategies’ from learners with a white ethnic background (left, n=376) and learner from a Black, Asian or Minoritised Ethnic background (right, n=234). Learners from a Black, Asian or Minoritised Ethnic background started the programme significantly more likely to make use of cognitive strategies ($p < 0.01$).

Learners from a Black, Asian or Minoritised Ethnic background started the programme with a significantly better understanding of their cognition compared with their white peers ($p < 0.01$). However, any progress towards improving these outcomes further is significantly less than is achieved for white learners ($p < 0.01$) – taking part in the programme seems to bring White learners’ understanding of their cognition more in line

with where Black, Asian and Minoritised Ethnic learners were at the start of the programme, but has no significant impact on Black Asian and Minoritised Ethnic learners when these results are analysed alone.

Learners from a Black, Asian or Minoritised Ethnic background also started the programme with a significantly more internal locus of control compared with their white peers ($p < 0.01$), and this did not change significantly over the course of the programme. White learners, on the other hand, had developed a significantly more internal locus of control by the end of the programme ($p < 0.05$).

Finally, learners from a Black, Asian or Minoritised Ethnic background started the programme with a higher baseline score for questions on use of cognitive strategies compared with their white peers ($p < 0.01$), however in contrast to the above, there was no significant difference between these two groups for the impact of the programme – both groups made better use of cognitive strategies after taking part in the programme, regardless of their starting point.

No clear differences were found for any of the other groups analysed.

Differences in impact by year group

KEY FINDING: older learners may benefit from the programme more than younger learners despite having better pre-existing metacognitive skills

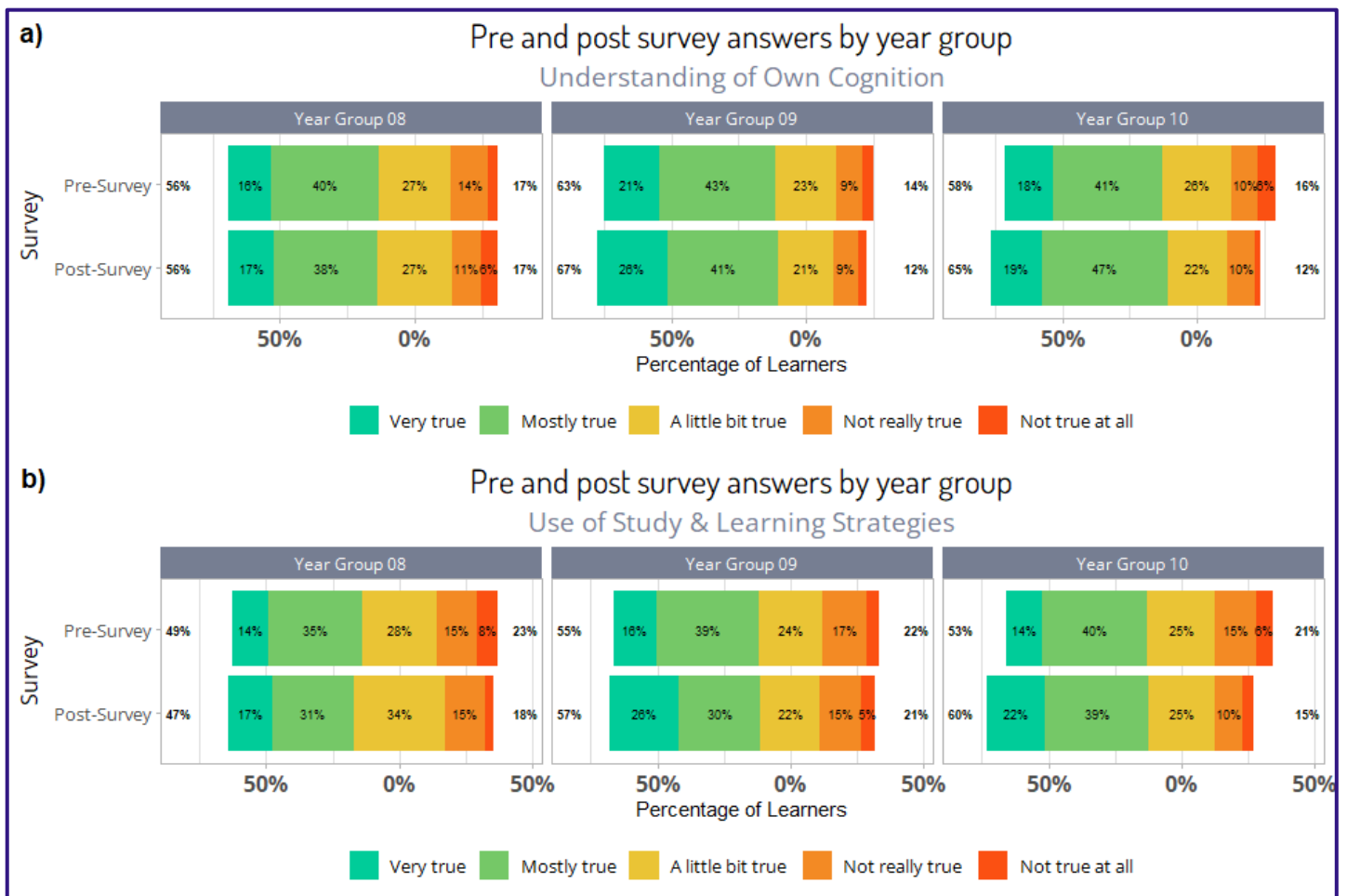


Figure 3 Pre- and post-survey responses by year group. Learners were asked to fill in a survey before and after taking part in the Think and Go Higher Programme. a) responses to questions on the topic of ‘understanding of own cognition’ from learners in year 8 (left, $n=242$), learners in year 9 (middle, $n=309$), and learners in year 10 (right, $n=249$). There is a significant difference between the pre and post survey results for year 9 ($p < 0.05$) and year 10 ($p < 0.01$) when analysed independently, but not for year 8. b) responses to questions on the topic of ‘use of study & learning strategies’ from learners in year 8 (left, $n=186$), learners in year 9 (middle, $n=223$), and learners in year 10 (right, $n=213$). There is a significant difference between the pre and post survey results for year 10 ($p < 0.01$) when analysed independently, but not for year 8 or 9.

In several areas, learners from different year groups had different baseline scores in the pre survey from each other. For questions on the topic 'understanding of own cognition', learners in year 9 answered the pre survey significantly more positively than learners in year 8 ($p < 0.05$), suggesting that their understanding of their own cognition was already more advanced before taking part in the programme. The trend did not continue with year 10s, however, with their answers falling in between those in year 9 and those in year 8. The same pattern could be seen in the section on knowledge of study and learning strategies, with learners in year 9 answering the pre survey significantly more positively than learners in year 8 ($p < 0.05$), with the answers from learners in year 10 falling in between these two groups.

Although the difference in distance travelled between year groups is not statistically significant in any section of the survey, there is a clear trend that the programme seems to have more impact on older learners – in the section on 'knowledge of own cognition', for example, the percentage of learners giving positive answers in year 8 remains unchanged between surveys at 56%, compared to the year 10s, where it increases from 58% to 65%.

When the pre and post survey results in this section are compared independently for each year group, there is a significant difference between the pre and post answers for year 9 ($p < 0.05$) and year 10 ($p < 0.01$) but not for year 8. The same pattern seen in the section on 'use of learning strategies', where there is a significant difference between the pre and post answers for year 10s ($p < 0.01$) but not for year 8s or 9s.

Impact of sustained, multi-year engagement

KEY FINDING: repeating the programme helped some learners to reinforce their learning

In focus group discussions, some learners highlighted that repeating the programme for a second consecutive year helped them to reinforce and apply their understanding of tools and techniques introduced in the sessions. Familiarity second time round gave them more confidence to embed these tools and techniques in their everyday learning. For one learner in particular, anxiety about presenting in the first year of participation was eased the second time around, having already experienced it positively the previous year.

Despite promising qualitative insights, this is not supported by pre and post survey data. We may expect to see higher baseline scores for repeating learners, or perhaps greater distance travelled. In both cases, no significant difference could be found between first-time learners and learners repeating the programme. However, this may be a result of the small number of learners who were taking part for the second time not forming a sizable enough cohort to identify a statistically significant difference. It is also the case that sustained engagement is more complex to try to measure statistically, as progress towards intended outcomes may manifest differently in repeating years. For this reason, qualitative data perhaps provides the greatest insight into the impact of sustained engagement.

“After the second time, I feel like it’s really, like, furthered my understanding on like how to like use certain methods to figure out how to answer certain questions.”

Impact of a HE campus based session

KEY FINDING: visiting a HE campus was a valuable source of inspiration for many learners

An important theme from the qualitative data (generated from focus groups and case study interviews) relates to learners' experience of visiting a higher education (HE) campus during the final session of the programme. Many learners reflected positively on the student atmosphere and the perceived opportunities HE could present for their future, commenting on being able to imagine themselves in a similar environment in the future. Reflections on inspirational campus experiences formed a strong theme throughout focus group discussions, strengthening our initial findings in the pilot evaluation that this aspect of the programme was valuable to learners.

“Seeing people working and all that in there like kind of made me feel like I'm going to be there one day. I'm going to be in that position.”

Further to this, some learners articulated the impact of the campus visit on their motivation to do at well at school, as best demonstrated by 'Henry', our case study learner (Figure 4). Henry's story shows that many features of an intervention can combine to generate nuanced impact – skills, experiences and expectations for oneself do not develop in isolation from each other. This will be experienced differently by all learners, but Henry's story presents an important intersection between HE outreach and attainment raising activity delivered by the HE sector.

Impact on learner empathy

KEY FINDING: learners value collaboration and develop empathy through debating and presenting tasks

Focus group discussions revealed an interesting, unanticipated theme about the value of collaborative and communication-focused tasks within the programme. Learners articulated that, through the process of debating, working together to solve problems and presenting together, learners felt more at ease with these sorts of exercises. They learned to respect each other's opinions and insights and supported each other with challenging tasks.

Although the evidence about the impact of social and emotional skills (such as empathy) on educational attainment is mixed (15–17) there are obvious connections between these skills and the

“It showed me, like, to be quite respectful when people are talking and like to actually listen.”

“I don't really like standing up in front of people, but after you realise that they're not gonna, like, laugh at you and actually gonna respect you when you're sharing your opinion, then it's not actually, like, that bad.”

metacognitive and oral communication skills that form the focus of the Think and Go Higher programme. Beyond this, insights from our learners challenge the efficacy of teachers' tendencies to avoid oral activities in class due to fear of making learners feel uncomfortable (13).

Meet Henry...

Who are they?

Henry is a Year 10 learner at a school in Bradford. Like many young people his age, he is currently considering his options after school. Although he dislikes school, he is a focused, confident learner. He hopes to earn decent money when he's older but is not yet sure what path to take. He has spoken to his family about their experiences and different options and listened to their perspectives.

Before Henry took part in Go Higher West Yorkshire's Think and Go Higher programme, he stood to benefit from developing cognitive strategies to support his decision-making and help him fulfil his potential. Henry wanted to feel like education had a clear purpose for him, and the programme had the potential to help him align these values with his decision-making.

"I'd rather be focused on a specific, like, goal in what I'm doing, than just going into a lesson being told, oh, yeah, we're doing this today, and then moving on to something else out of nowhere."

Their experience of Think & Go Higher

Henry highlighted multiple activities which enabled him to develop new cognitive strategies, such as choosing and justifying items to take to a desert island. By increasing his capacity to think in more depth, the skills he developed supported his decision-making skills and his study skills.

"Definitely made me think about things more specifically... actually taking a look at everything... understanding certain things and how stuff works"

As part of the programme, Henry visited the University of Huddersfield. Henry was inspired by his visit, identifying a clear connection between the campus visit and increased motivation to work harder at school. After observing students on the campus, Henry could picture himself studying higher education specifically to help him achieve and earn money later down the line.

"Obviously everyone in [the University] has pretty much got the same idea. You know, they're there for a specific reason. They want to learn specific things."

Concluding thoughts

As a learner with the potential to do well at school but undecided on his future pathway, Henry stood to benefit heavily from the programme. Despite disliking school, the programme enabled him to imagine himself in a higher education environment based on his own practical values, as well as developing vital skills to support him to fulfil his academic potential and make an informed decision.

"Actually like seeing the college and thinking, you know, this is a massive place. You could do so much here and that's why I wanted to try harder, like, try as much as I can anyway, in school."

Figure 4 Case study of a Year 10 'Think & Go Higher' programme participant.

Discussion

Statistically significant progress was made towards all intermediate outcomes by learners who have taken part in the Think and Go Higher programme. This finding adds to the body of evidence showing that sustained progressive programmes like this one have a positive impact on learners' metacognition and oracy skills. There is existing evidence linking both metacognition and oracy with increased attainment (18), however the impact of this programme on these long-term outcomes is not yet apparent – as the programme is aimed at comparatively younger learners, their GCSE results will not be available for several years after the end of the programme. Furthermore, the first cohort of learners who will have taken part in all three years of the programme will not sit their exams until the academic year 26/27. Therefore, the intermediate outcomes of the programme must be assessed in the meantime.

Learners showed progress towards all outcomes, but the effect size was clearest for the 'communication skills' section, consistent with the findings from the pilot year of the programme (4). This is in line with existing literature that suggests that programmes are the most effective when what they are teaching is explicit (18) – communication skills are overtly present in the programme, and are a concept that learners will be very familiar with learning about, so it is likely that this is the topic they are most clear that they are 'supposed to be' learning about. Despite this, significant progress is made in all areas assessed by our impact evaluation. This includes, for example, locus of control, which is not explicitly addressed at all in the programme. This shows that the programme does have a positive impact even when topics are not explicitly addressed.

It is also clear that we see a bigger impact of the programme this year compared to the previous year - there are a number of factors that could have led to this effect. An improved evaluation design is sure to be one contributory factor. More greatly improved learner outcomes could also be due to the changes that were made to the programme in response to the pilot evaluation findings. Finally, these outcomes could be the result of an outreach team who are more familiar and comfortable with the material they are delivering.

The programme seems to be more impactful for older learners, which is in line with the findings from the pilot year of the project (4). This aligns with existing literature, where it has been established that children do not develop any metacognitive skills until the age of 8-10 (19) (our youngest participants are aged just 12/13) and that metacognitive skills increase over time, with improvements in monitoring and regulation often happening around the age of the learners in this programme. Indeed, these skills remaining incomplete in some individuals even in adulthood (20). Despite these often naturally occurring improvements to metacognition, our statistically significant results demonstrate that teaching metacognitive skills delivers strong intermediate outcomes. ensuring that learners experiencing inequality do not miss out on developing these vital skills.

Although literature suggests that sustained programmes are more impactful compared with one off interventions (21) the analysis of this year's survey results do not show a significant difference, either in baseline scores or impact, between those learners who have taken part for the first time or for the second time. However, it should be noted that the number of learners who are taking part for the second time is relatively small – only 19% of the learners are taking part for the second time, making this population very small and therefore unlikely to show significant results even if there is a difference there. In contrast to the survey data, some learners in focus groups did highlight that they felt the benefit of taking part for a second time. In future years, as more learners take part for multiple years, the impact of the sustained programme might become clearer.

In several sections, Black, Asian and Minoritised Ethnic learners scored higher in the pre survey compared to their peers, but we did not see as big an impact in terms of distance travelled in the post survey as we did for white learners. These results could reflect several different things: that Black, Asian, and Minoritised Ethnic learners already have higher metacognitive skills than their peers, and therefore have less to learn from the programme; that Black, Asian, and Minoritised Ethnic learners overestimated their own skills, therefore giving them 'nowhere to go' in the post survey; that the programme is not being delivered effectively to meet the needs of Black, Asian and Minoritised Ethnic learners; or that there are flaws in the ways in which Black, Asian and Minoritised Ethnicity learners are selected for the programme.

There is some evidence that unconscious bias could lead teachers to underestimate the academic achievements of these learners (22,23), and this could be one possible explanation for Black, Asian or Minoritised Ethnicity learners having higher metacognition than their peers, as it could lead to their attainment and metacognitive skills being underestimated during the selection process. If this is the case, then eligibility criteria and selection processes should be reviewed to ensure that learners who would most benefit from the programme are selected regardless of their ethnicity.

It could also be the case that Black, Asian and Minoritised Ethnic learners do have higher metacognitive skills. There is very little literature around Minoritised Ethnic learners and metacognition to help to establish the reality. Several studies of US HE students found that metacognitive skills are under-realised in Minoritised Ethnic students, and that metacognition programmes are particularly effective for these students (24–26) – however this is the opposite of what we have found. US studies on locus of control are also contradictory to our findings, as they find that children from minoritised ethnic backgrounds had a more external locus of control than their white peers (27,28) – but of the course the context surrounding African American children in the USA in the 70s and 80s are very different from those surrounding modern Black British learners, and there is a dearth of recent British literature on the subject.

Parental expectations and involvement may be a key factor, as they have been linked to differences in locus of control (29), aspirations (30), school achievement and participation in post-16 education (31,32), and learners from Black, Asian or Minoritised Ethnic backgrounds may have differing parental expectations compared to their peers (31,33). There may also be additional nuance in the intersection between different factors - differences in metacognition and locus of control between different ethnicities may vary with age, stage of education (34), or gender (35), and use of the broad label 'Black, Asian, and Minoritised Ethnicities' may disguise differences between more specific ethnicities. This topic needs further exploration to ensure that metacognition programmes such as Think & Go Higher can be delivered effectively to learners of all ethnicities.

No differences were found between learners who were in other groups underrepresented in higher education prioritised by GHWY and those who are not in these groups. However, it should be noted that this analysis may miss key intersectional identities that many of our learners experience.

Further findings are less directly focused on the core programme objectives, but encapsulate important qualitative learner insights which demonstrate indirect impact on the intended programme outcomes. The inclusion of a HE campus visit has proved to be particularly inspiring for learners, supporting their decision-making abilities as well as, in some cases, providing the motivation to work hard at school. The combination of high aspirations and high expectations has been shown to have a positive impact on learners' school attainment in England (34). Our findings support this, reinforcing the importance of an 'imagined future self for fulfilling one's potential (36) alongside the important intersection between HE outreach and attainment raising activity. Furthermore, despite being an unintended programme outcome, learners' articulations of improved empathy and collaboration skills demonstrate the importance of developing a broad range of cognitive, social and emotional skills to maximise learners' potential in the classroom and, indeed, beyond.

Recommendations

Consider more explicit approaches to teaching all aspects of metacognition

While our findings demonstrate significant impact across all intended outcomes, the greatest impact relates to communication skills, which is the most explicitly taught aspect of the programme. Alongside this, we have identified an opportunity for metacognitive tools and techniques to become embedded in the classroom. A more explicit approach to the teaching of metacognitive skills in the classroom and in outreach programmes and could help address these gaps.

Investigate why metacognitive outcomes may differ based on broad learner ethnicity groups

Our findings show that white learners typically begin the Think & Go Higher programme with lower levels of metacognition than Black, Asian and Minoritised Ethnic learners, and make bigger gains by the end of the programme. It may be the case that people from different ethnicities have differing metacognitive needs. There may be other reasons for the differences, such as shortcomings in the approach to learner selection. These potential hypotheses need further research and exploration.

Prioritise opportunities for older learners approaching their GCSEs to develop their metacognitive skills

The Think & Go Higher programme offers a multi-year sustained approach to developing metacognitive skills, from Y8 to Y10, designed to develop and embed these skills over time. Within this approach, our findings show that impact is most realised as learners come of age into their critical GCSE years. To ensure learners benefit from these skills when they most need them for school attainment, learners should be taught metacognition in Y10, *at least*.

Recognise the connection between a learner's interest in HE progression and academic motivation

While the primary policy focus for raising attainment relates to what happens inside the classroom, our findings indicate that motivation to apply to higher education can also translate into motivation to work hard and succeed in school. This matters for initiatives designed to raise attainment, which ought to be more closely linked to initiatives designed to support learner decision-making.

Maximise opportunities for learners to collaborate and support each other's communication skills in the classroom

Although they may struggle at first, our findings show that learners really value opportunities to work together, listen to each other and practice empathy. Developing these social and emotional skills has the potential to intersect with broader metacognitive and communication skills, forming a holistic approach to embedding skills for learning, incl. interventions designed to raise attainment.

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Appendix A: Programme Sessions

Session		Focus	Outcomes
1	Go Connect	Encouraging learners to find links between different pieces of information using tools such as lotus blossom diagrams and post it note dominoes*.	<ul style="list-style-type: none"> • Understanding of own cognition • Knowledge of study & learning strategies • Use of cognitive strategies
2	Go Analyse	Using critical thinking and interrogating questions to help learners justify the connections they are making in session 1.	<ul style="list-style-type: none"> • Monitoring and regulation • Knowledge of study & learning strategies • Use of cognitive strategies
3	Go Debate	Learners use the skills from the previous two sessions to debate with each other using tools such as the PEE ('point, evidence, explain') paragraph structure.	<ul style="list-style-type: none"> • Communication skills • Knowledge of study & learning strategies
4	Go Collaborate	Building on the debating skills from the previous session to work together as a team and reach a consensus using activities such as the 'survival game'*.	<ul style="list-style-type: none"> • Communication skills
5	Go Present	Learners practice presentation skills including giving feedback to each other.	<ul style="list-style-type: none"> • Communication skills • Monitoring and regulation
6	Go Visit	Learners visit and FE or HE campus and take part in activities designed to draw on all of the skills they have learnt in the previous 5 sessions.	<ul style="list-style-type: none"> • Understanding of own cognition • Locus of control • Communication skills • Monitoring and regulation • Knowledge of study & learning strategies • Use of cognitive strategies

*See the previous report in this series for more details on these activities (4)

Appendix B: Methods

Evaluation Design

Demographic data and longitudinal tracking

Demographic and monitoring data were collected via schools and uploaded to the Higher Education Access Tracker (HEAT) database for storage and longitudinal tracking. Data for learners with similar characteristics as the participants were also collected to enable the use of a comparator group when considering long term outcomes once they are available.

Pre and Post surveys

Learners were given a pre and post survey to complete at the start and end of the programme. The survey was designed to be as accessible to school age participants as possible, with a Flesch-Kincaid grade level score (37) of 7.4, making it suitable for readers in US 7th grade, or the equivalent of the UK year 8, as well as a Flesch reading ease score (38) of 71.6, which is considered 'plain English'.

Questions were adapted from a number of available validated surveys testing metacognition, including Bandura's Children's Self Efficacy Scale (39), the GOALS-S Scale (40), and others (41–44).

Learners' names and ID numbers were pre-printed on the sheets using mail merge to ensure that survey responses could easily be matched with demographic data. Survey questions can be found in Appendix C. As much as possible where time allowed, delivery staff went through each question with the learners as a group, ensuring they understood what was being asked and had time to reflect on their answers.

Focus groups

Focus groups were held at four schools which were taking part in the programme for the second time, with learners in year 9 and 10 participating.

Facilitator interview

An interview was conducted with one GHWY Outreach Officer who (alongside colleagues) facilitated the Think & Go Higher programme. The interview was focused on observed impact and opportunities for continuous improvement.

Data Cleaning

Data Cleaning

Survey data were discarded if only either the pre or post survey was present. Where a learner had not answered a specific question in either the pre or post survey, but had otherwise completed the survey, they were excluded from analysis of this question alone.

It has been observed that in previous years, survey participants may be inclined to rush through answering the survey without fully reading the questions or reflecting on the answers. To control for this inattention bias, both positively and negatively phrased questions were included in the survey. Before analysis, negatively phrased questions were reverse coded so that responses to both types of questions were comparable.

For each of the outcomes, the mean response to the negatively phrased questions and the mean response to the positively phrased questions were compared, and any participants with a difference in mean score of greater than 2 being discarded for that section, as it was assumed that answering a question on the same topic in opposite ways was likely to represent a lack of attention. Approximately 24% of survey responses were discarded for this reason.

Analysis and Statistical Testing

Survey result analysis

To analyse impact, a paired Wilcoxon test was done to compare pre and post survey results. For section-by-section analysis, questions were combined such that each response was treated as a separate data point.

To assess differences in impact between different groups, a 'distance travelled' metric was calculated by subtracting each learner's pre survey score from their post- survey score. The distance travelled values for each group were then compared using an unpaired Wilcoxon test when there were two groups, or a Kruskal-Wallis test when there were more than two groups. If the Kruskal-Wallis test returned a significant result, pairwise Wilcoxon tests were then done, using Benjamini & Hochberg's correction for multiple tests (45).

Software and data availability

All statistical testing and data visualisation was done using R Statistical Software (v4.4.1; R Core Team 2024) (46) with R Studio. (v2024.4.2.764) (47). Graphs were made using ggplot2 (v3.5.1) (48) and ggstats (v0.8.0) (49). Raw data and code available on request.

Focus group analysis

Audio recordings were made of the focus groups, which were transcribed for analysis. Data from four focus groups were combined for coding and thematic analysis in Microsoft Excel.

Appendix C: Survey Questions

	Question	Outcome
Q1.1	When it comes to learning, I know my strengths and weaknesses	Understanding of own cognition
Q1.2	I know when I have understood a new concept or idea	Understanding of own cognition
Q1.3	After I finish a test, I can't tell whether I have done well or not until I get the results*	Understanding of own cognition
Q1.4	I know what the teacher expects me to learn	Understanding of own cognition
Q1.5	When work is hard I either give up or only study the easy parts*	Understanding of own cognition
Q2.1	If I work hard and study, I can do well in any test	Locus of control
Q2.2	I always hand in homework on time	Locus of control
Q2.3	It is important to me to do well at school	Locus of control
Q2.4	I find it hard to make myself study when there are more fun or interesting things to do*	Locus of control
Q2.5	To do well at school you have to be naturally clever*	Locus of control
Q2.6	Some people will never do well at school no matter how hard they try*	Locus of control
Q3.1	When I try to convince my classmates of something, I think about how to structure my argument	Communication skills
Q3.2	I use evidence to support my ideas	Communication skills
Q3.3	I find it hard to express my opinion when other classmates disagree with me*	Communication skills
Q3.4	I am confident asking questions in class	Communication skills
Q4.1	I ask for help from teachers when I need it	Monitoring and regulation
Q4.2	I go back after I finish and check my work	Monitoring and regulation
Q4.3	Even when I do poorly on a test, I try to learn from my mistakes	Monitoring and regulation
Q4.4	I consider whether there was an easier way to do things after I finish a task	Monitoring and regulation
Q4.5	When I finish a question on a test, I move on to the next question and don't think about it again*	Monitoring and regulation

Q5.1	I am unsure which techniques work best for me when I am learning and studying*	Knowledge of study and learning strategies
Q5.2	I reuse learning methods and study skills if I know they have worked well before	Knowledge of study and learning strategies
Q5.3	I feel unprepared to handle new and challenging tasks*	Knowledge of study and learning strategies
Q5.4	I listen to feedback from teachers and use it to improve my work	Knowledge of study and learning strategies
Q6.1	When learning things for school, I often remember what I learnt in other classes about the same or similar things	Use of cognitive strategies
Q6.2	I am good at organising information (for example, I can see how parts of my learning link together)	Use of cognitive strategies
Q6.3	I reorganise my schoolwork so that I can understand it better	Use of cognitive strategies
Q6.4	I'm unsure how best to plan my homework and revision	Use of cognitive strategies

*These questions were reverse coded before analysis



GO HIGHER

WEST YORKSHIRE

Bradford College

 UNIVERSITY of
BRADFORD

 UNIVERSITY
CENTRE
Calderdale College

University of
Huddersfield
Inspiring global professionals

 **KIRKLEES**
COLLEGE

 **LEEDS**
CONSERVATOIRE

 **UNIVERSITY OF LEEDS**

 **LEEDS**
ARTS
UNIVERSITY
1846

 **LEEDS**
BECKETT
UNIVERSITY

Leeds
College of
Building

 **University**
Centre Leeds

 **Leeds Trinity**
University

 **University Centre**
at the Heart of Yorkshire Education Group
