

Think, Reflect, Succeed: Analysis of the University of Derby's approach to effective attainment raising outreach with secondary-age learners

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Abstract

The University of Derby's (UoD) Think, Reflect, Succeed (TRS) programme has been developed in response to drivers to support young learners to raise attainment. The programme offers a new approach for UoD's Widening Access (WA) team in the provision of raising attainment outreach and is a move away from its traditional offer of revision technique activities. The teams' own reflections, research into best practice, and 'what works' evidence informs TRS, which is delivered to up to 200 local learners from under-represented groups per year. TRS takes metacognitive and self-regulated learning strategies as the basis for sessions on reflection, critical thinking, and researching skills. Evaluation is mapped using a Theory of Change (ToC), and evaluated through a mixed methods approach, giving both quantitative and qualitative data against which outcomes and impact measures are tracked.

This chapter reviews the development of TRS and the emerging findings within the context of institutional, local, and political drivers, with a further analysis of socio-economic, demographic and geographic factors. It puts forward the view that metacognitive and self-regulated learning strategies have a positive impact on raising attainment, and that the use of theories of change and mixed evaluation methods are highly beneficial for measuring success, outcomes and impact.

Key words: raising attainment, cognition, metacognition, self-regulated learning.

Introduction

This chapter will review the development, implementation and evaluation of UoD's TRS programme, a raising attainment programme delivered to Year 10 (ages 14-15) and Year 12 (ages 16-17) pupils in Derby City and areas of disadvantage in Derbyshire. It will outline the implementation and emerging findings of the programme within the context of institutional, local, and political drivers, with an analysis of the socio-economic, demographic and geographic factors which have influenced its development.

The programme was first piloted in the academic year (AY) 2019-20 in response to an emerging government agenda for universities to better support schools in raising the attainment of under-represented target groups (OfS, 2018a). This has further formalised into an expectation for universities to engage in this work as part of their Access and Participation (APP) plans (OfS, 2023).

Alongside this agenda, UoD's attainment raising support programme, Raising the Grade, focusing on teaching revision technique strategies, was being reviewed. The outcome of the review was that it was hard to show impact, needing significant buy-in from schools to provide predicted and actual grades, and hard

to deliver, having to take into account numerous exam boards curricula and not playing to the delivery strengths of UoD's WA team.

Research into effective learning strategies (for example, Schraw et al., 2006; Crawford and Skipp, 2014; Fleming and Lau, 2014) led the WA team to develop the TRS programme, with a focus on the use of cognitive, metacognitive and self-regulation approaches.

The programme has been further refined during successive years and this chapter provides an overview and analysis of the findings from AY 2022-23, the first year a fully developed programme has been delivered.

The discussion has three foci – the use of metacognitive and self-regulated learning strategies in raising attainment programmes; the use and effective implementation of ToC and mixed methods evaluation; and the challenges and limitations of UoD's approach to both delivery and evaluation. The concluding argument asserts that the use of metacognitive and self-regulated learning strategies has value, and its impact is best measured through the use of a mixed methods evaluation and, whilst there are challenges, the positives of both outweigh these.

Context

Local and policy context

The WA team's goal – to increase participation and equitable outcomes for under-represented groups – has been developed to ensure a focus on the needs of local cohorts, working collaboratively with local schools and other organisations, to address very challenging, entrenched, social mobility issues. To do this, it has been pertinent for us to understand the local and policy contexts within which the UoD operates. The Social Mobility Commission's *State of the Nation Report* (2017) mapped outcomes by 324 local authorities (LAs) in England. Their findings identified the East Midlands region as providing some of the worst opportunities in England for social progress for those from disadvantaged backgrounds (Social Mobility Commission). As identified in Bainham (2019), 'The picture is particularly acute in Derby, which sees the city ranked 316th out of 324 LAs with General Certificate of Secondary Education (GCSE) attainment well below the national average' (Bainham, 2019). However, this low progression and opportunity is not just confined to the city, and we see this within other areas of Derbyshire where we are committing resource, with all but one of the Derbyshire LAs in the bottom third of the social mobility rankings, and six specifically highlighted as amongst the worst social mobility cold spots in the country (Social Mobility Commission, 2017).

As a response, the Department for Education made Derby City one of the first opportunity areas in October 2017 (DfE, 2017). Following five years of funding through the Derby Opportunity Area, GCSE attainment has shown some increase, however, this progress has been slow and when taking GCSE and average attainment 8 scores into account, Derbyshire and Derby City continue to rank among the lowest performing areas in the country (Gov.uk, 2023). This is reflective of a progressive issue within the whole of the East Midlands which was the lowest ranked area for GCSE results in the country in 2016 (Weale, 2016), and the second lowest performer in 2019 (Jones, 2019), with Derbyshire remaining one of the lowest performing counties in achieving a grade 7 and above at GCSE in 2023 (McHardy, 2023). Both the social immobility and GCSE performance are key challenges which were considered when developing the TRS programme.

Further compounding the geographic issue with the attainment of learners at school level in the region alongside the challenge of socially mobile students, was the effect of the disadvantage attainment gap which persists and continues to affect learners from a widening participation (WP) background throughout higher education (HE) (Wainwright et al., 2019). This also affects the continuation rates of WP students, with

significant numbers dropping out of university in their first year compared to students from more advantaged backgrounds (Lizzio and Wilson, 2013). Ultimately then, low attainment at school level, particularly for those universities where a high percentage of students meet at least one WP criteria, creates a domino effect and continually impacts students who eventually go on to attend HE.

National government policy was also an important factor in our decision-making, as this ultimately drives the work of all outreach teams concerned with WP and outreach. The Office for Students (OfS) outlined key insights into how universities should be working with their local schools to improve attainment levels of learners from widening participation backgrounds (Office for Students, 2022). However, it does not specifically detail what universities need to do to close these gaps. It is, therefore, down to interpretation in how to address supporting schools to raise attainment.

University of Derby widening access drivers

It is important to provide further institutional context to the outreach work of the WA team. We were conscious in our planning of UoD's 2020-25 APP (University of Derby, 2019), and although UoD did not have any specific access stage targets, the WA team committed to supporting a longer-term, strategic focus to improve equality of opportunity for under-represented groups to access, succeed and progress through HE. The APP reflected UoD's ambition for change, targets, and key performance measures, and put focus on the work at the access stage to improve attainment as well as influence, reduce and eliminate gaps for on course students.

UoD's APP targets focus on current students and continue to reflect the nature of UoD's student body, where 49 percent of undergraduate entrants in AY 2021-22 were from low participation neighbourhoods, 21 percentage points higher than the sector average. From both a local and institutional context, we needed to ensure that our attainment related outreach programmes are designed to increase the skills and confidence in our local school and college learners, not only to support progression to university, but to give under-represented students the best possible chance to continue and succeed in their HE studies.

UoD widening access programmes are offered wholly, or in part, to 39 local secondary schools, and several local primaries. The approach was developed following a literature review, scoping exercise of sector research, and our own evaluation of what works. Widening access activities form long-term outreach programmes aimed at raising awareness and attainment, and supporting the realisation of ambitions of under-represented and target learners through a multi-intervention approach creating 'drip feed' touchpoints for cohorts of learners. Evidence shows this approach has proven impacts on learners in attainment, motivation and understanding; and promotes sustainable change (Causeway, 2022; Harding and Bowes, 2022; OfS, 2021; Patel and Bowes, 2021; TASO, 2021; Bainham, 2019; OfS, 2018b). TRS was embedded as a key element of these programmes.

Combining the challenges of socially immobile students, GCSE performance and progression at university, we were presented with a key issue - disadvantaged and under - equipped learners continue to be disadvantaged even if they do go on to attend university. It was, therefore, simply not enough to support our local learners with their attainment and GCSE results - we had to better prepare them for HE and ensure they developed the key skills that not only enable them to attain the grades, but ensure they have the capabilities to succeed within a HE setting. In order for this to be achieved, we identified the key skills that learners need to apply at all stages of their education.

Methodology

TRS programme development

The TRS programme was initially proposed and developed in the AY 2019-20 because of the difficulties of measuring the impact of previous attempts by the WA team to increase attainment in local schools. In

previous years, the team had delivered a programme of revision skills sessions, Raising the Grade, which were aimed at increasing revision skills in English and Maths for Year 11 learners (15/16 years old) to enable them to achieve a level 5 grade (classed as 'strong' pass grade) in both English and Maths at GCSE.

Reflections on the data and evidence from the Raising the Grade programme indicated that attainment raising via delivering revision skills sessions simply did not have the desired impact and was hard to measure, too reliant on provision of predicted and actual grades from already stretched school staff, and unable to draw a meaningful conclusion of impact on the final grade accomplishment due to wider influencing factors. Our learning was that we, as a HE institution, are better placed and better equipped to deliver programmes that build key skills through focus on self-regulation, reflection, critical thinking, and building self-efficacy that will enable learners to be better prepared for learning in a HE setting.

The TRS programme was therefore developed and adapted with our current skillset, local context, OfS guidance and current research in mind. If learners are to successfully transition into HE, it is vital that they not only achieve the correct grades but can reflect on and understand their learning processes throughout their educational journeys (Cromley and Kunze, 2020). Research indicates that learners who reflect on their learning have high levels of self-efficacy and are able to develop cognitive critical thinking skills and therefore learn more successfully and adapt better to academic environments than those who are unable to self-regulate their learning (Urban and Urban 2023; Fleming and Lau, 2014; Schraw et al., 2006). In the context of TRS, the WA team used this research to develop three main components: critical thinking, reflection and research.

Schools from Derby City and Derbyshire were targeted for TRS, with a maximum of 50 learners per programme, and three delivery events offered in AY 2022-23, giving a maximum of 150 places across the year. For both year groups, critical thinking approaches related to realistic situations, their ability to determine facts and opinions in news stories, and how they articulate their own thoughts and opinions in a concise and critical manner. To build reflection skills, learners watched a video around a topic that interests them and were then asked a series of questions to prompt reflection on what they saw. Learners then applied the critical thinking and reflection skills to develop a research-based question of their own using the UoD's online library and open access resources.

TRS methodology

There was a robust evaluation structure within TRS, and reflection for the WA team was embedded throughout using ToCs and logic models to map out success and impact measures and ensure effectiveness. A mixed methodology was employed, including individual activity feedback and teacher evaluation within TRS specifically. The use of ToCs logic models is now widespread within the public sector, with, for instance, all Uni Connect Partnerships being encouraged to adopt a logic model approach to evaluation (OfS, 2018b). As UoD's widening access work has many complex strands, employing a ToC ensured we gave systematic consideration to TRS alongside all our programmes of activity, plus UoD's strategic aims and the APP.

TRS evaluation consists of pre and post surveys collected in person to determine progress in the learners' attitudes to HE, confidence, and self-reflection on their understanding of all three topics that make up TRS. These surveys were measured on a Likert scale (Likert, 1932). We also collected other information post event, including learners' knowledge of university, how they feel they would fit in at university, and if they feel that the skills learnt would help them in their current and future studies. In the longer-term, this will be further underpinned by tracking outcomes for the learners into and through HE.

For the purposes of this chapter, we will focus on the evaluation of the critical thinking, reflection and research sessions, and learners' and teachers' qualitative responses.

Findings

In AY 2022-23, Think, Reflect, Succeed was delivered over three separate events to 107 learners in total: 53 learners in Year 12 and 54 learners in Year 10. All these events were delivered either at UoD's Kedleston Road site or in school. Five schools attended the events, all of which are high priority schools in both Derby City and Derbyshire due to the number of pupils meeting WP background criteria, such as, above average free school meal (FSM) percentages and low attainment levels at GCSE. Students who met at least one WP criteria, whether that be socio-economic or ethnic background, were chosen to take part in the programme. One hundred learners in total filled out the surveys, 47 learners in Year 12 and 53 learners in Year 10. Seven teachers also completed a post event survey.

The data, detailed as follows, indicates the responses that learners gave when asked a series of questions. The first three questions relate to the content of the sessions and were measured in pre and post question on the response scale. All the data and graphs are taken from a combination of both Year 10 and Year 12 evaluation data that were collected over the three TRS events.

Critical thinking

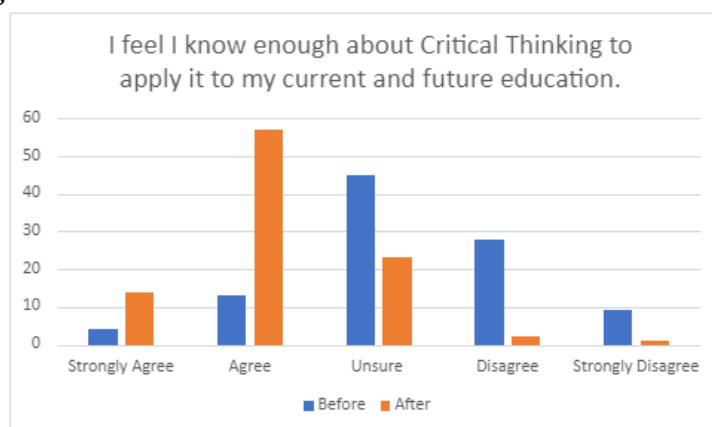


Figure 1. Critical thinking evaluation responses.

Figure 1 shows a significant increase in learners either agreeing or strongly agreeing that they felt more confident in their abilities in applying Critical Thinking to their current and future studies. Initially, 17 percent of learners felt confident in their critical thinking skills pre event. After the event, however, this had increased to 71 percent of learners. There were also decreases in students who disagreed or strongly disagreed with the statement, dropping from 37 percent to just 3 percent of learners post event. Those that answered 'Unsure' also dropped from 45 percent to 23 percent.

Reflection

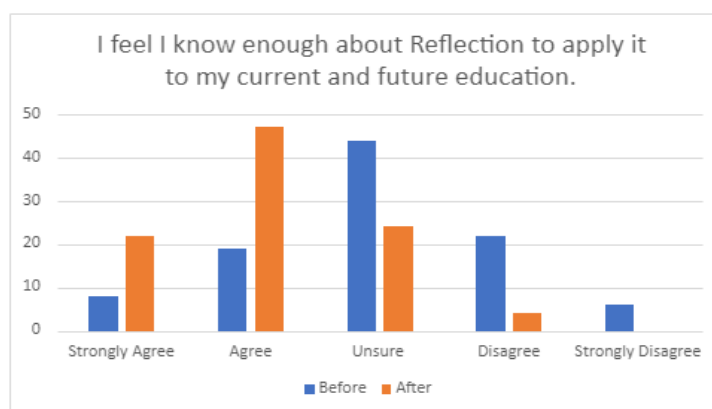


Figure 2. Reflection evaluation responses.

In figure 2, there was a significant increase in learners indicating that they felt more confident in their abilities to apply reflection to their current and future studies. While 27 percent of learners initially agreed or strongly agreed with the statement, this had increased to 69 percent of learners post event. There were also decreases in those who disagreed or strongly disagreed with the statement pre and post event, decreasing from 28 percent to just 4 percent. It is also important to note that no learners strongly disagreed with the statement post event.

Research

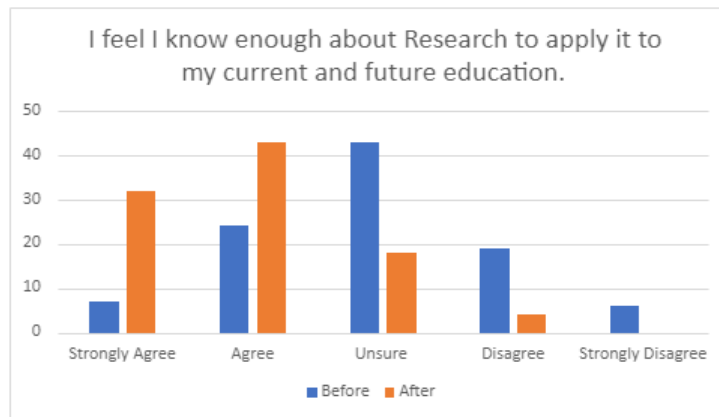


Figure 3. Research evaluation responses.

There are some differences to mention initially in figure 3, as a high percentage of learners already felt confident in their research abilities. However, this may be due to almost half the learners being in Year 12 and perhaps already familiar with research skills linking to their current studies.

Despite the high pre event positive response, there were still clear improvements in the learners' confidence in applying research skills to their current and future studies with 75 percent of learners agreeing or strongly agreeing post event they felt more confident - the highest out of the three sessions. There were also decreases in those who disagreed or strongly disagreed pre event, dropping from 25 percent to just 4 percent of learners post event. Again, as in the Reflection session (see figure 2), no learners strongly disagreed with the statement.

Application of skills

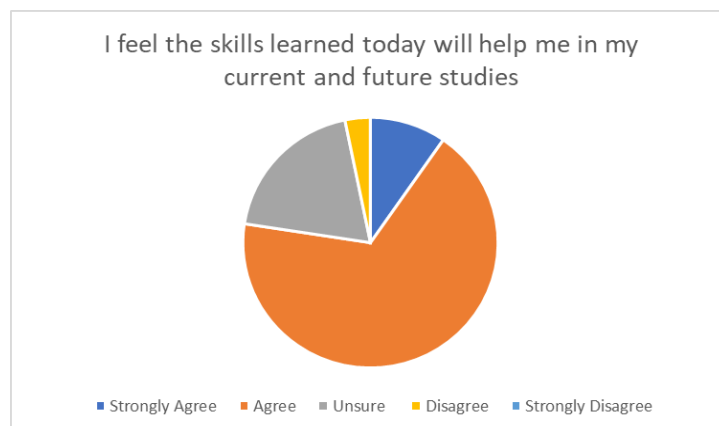


Figure 4. Skills evaluation responses

Figure 4 relates to the learners' reflections on whether TRS had increased their overall confidence in their skills and applying them in current and future studies. The learners responded positively to this question, with 77 percent of learners agreeing or strongly agreeing, and only 3 percent of learners disagreeing or

strongly disagreeing. These responses also directly link to the positive responses from the response scale questions. This is a strong indication that TRS did increase learners' confidence in their abilities to apply these skills in both their current and future studies.

As part of the evaluation process, we also collected qualitative data from both the learners and the teachers. This provided the team with contextual information which further underpins the impact of the programme as well as helps us to understand which elements work particularly well. Responses from the learners showed that they understood not only what they learned, but also how they can apply it:

I have learnt how to research and reflect on my learning in school. (Year 10 student)

I have learnt how to discuss my contextual knowledge in research responses. (Year 12 student)

(I can) differ between bias and unbiased information. (Year 10 student)

This was further backed by qualitative data collected from the teachers:

Thank you for offering them the opportunity to work independently, think for themselves, choose their own areas of interest. They are SO dictated to by teachers trying to get through prescribed specifications, this gave them some much needed autonomy and freedom.

Really good info for students to gain different ways of thinking and using information.

The learners did, however, raise concerns about the structure of the delivery of TRS, as well as some content additions they may have found useful and engaging:

Could provide some additional things that we could take home to further build on those skills.

Some information sheets/activity sheets to take home.

More time to visit parts of the university.

Show us around the university more.

The teachers who provided responses also reflected on what could improve the learners' experience:

Similar session design in all three sessions, was not appropriate for some pupils who lost concentration at times.

More opportunities to move around the campus.

As shown, evaluation of the programme is based upon robust data, providing clear evidence of the impact. The use of a mixed methods approach has given rich quantitative but also qualitative data and a voice to the learners to illustrate how the programme has benefitted them. These learners are local young people, many of whom face multiple barriers and challenges to learning and attainment which has been further exacerbated by the period of lockdown, and it has been clear to see the positive impact this programme has had on their confidence and ability to self-regulate their learning.

Discussion

Although the TRS programme is still in the early stages of development, there is already emerging strong evidence for the positive impact of the programme on supporting learners to develop self-regulation and independent learning skills and build confidence in applying those skills to current and future studies. This supports the view that university widening access teams' expertise and skills are better suited to developing outreach programmes focused on cognitive and metacognitive approaches than on revision skills style activity due to the difficulties in evaluating the impact of revision skills activities on final grades. Instead, our focus is concerned with supporting learners to put in place the building blocks of metacognitive

thinking and to build their confidence in the application of metacognitive thought strategies. The effectiveness of metacognitive strategies is supported by research such as Muhid et al. (2020) whose study of the effect of these strategies on 16-17 year olds in secondary education found they 'promoted students' reading performance as well as their ability to maximize their reading effectively' they concluded that the bulk of the evidence suggests that 'improving SRL (*self-regulated learning*) and metacognition can lead to improved attainment' and that this evidence is 'quite strong' (Miujs and Bokhove, 2020).

Further, in terms of evaluation we can also provide emerging evidence for the strength of employing a mixed methods approach, including a ToC model, pre and post questionnaire, teacher evaluation and long-term tracking of outcomes through the East Midlands Widening Participation and Evaluation Partnership (EMWPREP) tracker database. EMWPREP is a collaborative partnership database through which UoD monitors and tracks learners through their educational lifecycle, including learners' degree outcomes and their progression into graduate employment.

The development of the ToC, in particular, gave us the opportunity to think through what we wanted to investigate and understand the impact of our metacognitive approach to attainment raising in both the short-term and long-term. The ToC has given structure to our analysis of findings and has made the process of mapping against expected outcomes and short-term success measures much more effective and efficient. As mentioned previously, the use of ToCs is becoming more widespread in the public sector and is something which the OfS see as a vital stage of evaluating outreach activity, as can be seen in the latest guidance for universities completing Access and Participation Plan, where inclusion of a ToC is a necessary element of the submission (OfS, 2023). The importance of utilising a ToC is further backed by TASO (Transforming Access and Student Outcomes in Higher Education), an independent charity, who state that, a ToC 'allows you to describe the need you are trying to address, the changes you want to make (your outcomes) and how you plan to achieve these changes (your activities). It also allows you to answer key questions around your intervention' (TASO, 2023). However, the positive evidential use of ToCs goes far beyond the evaluation of a small outreach programme, and so can be used as we scale up activity or collaborate with partners on a much more substantive programme. Such can be seen in a number of evaluative applications from complex, national initiatives in the USA (DuBow and Litzler, 2019) to supporting environmental decision making in Australia (Allen et al., 2017). The use of ToCs is therefore an evaluation tool which we intend to continue to use as our attainment raising work develops.

Challenges and limitations

Despite the overwhelming positive responses from the evaluation forms which indicate that the learners have increased confidence in their skills and applying them in their current future studies, there are some limitations to our evaluation methods and constructive contextual feedback. For example, we do not employ quasi-experimental methods such as randomised control trials (RCTs). This may be something for us to consider in the future, however, due to it being both a time and resource costly activity, this is not something we could practically include at this point. The use of RCTs can also be problematic in a social science setting as it raises both ethical and practical questions, particularly when it comes to limiting external factors to be able to properly conduct the trial. The challenges of RCT use is well documented (Gale, 2018; Hayton and Stevenson, 2018) and supports our decision to not employ this method to this outreach programme. The programme would also benefit from comparative analysis of other programmes concerned with attainment raising. The WA team have shown that we are able to evaluate more effectively the benefits of attainment raising via self-regulated learning and metacognitive approaches, compared to previous attempts via revision skills in the Raising the Grade programme. However, a longer-term analysis of the programme, as well as comparative analysis of other programmes delivered by other university outreach teams, or of learners from similar backgrounds but who do not take part in the activities, is needed to measure the true impact of the programme on longer-term attainment raising.

Additionally, due to TRS being a relatively new programme, if we are to confidently state that it provides long-term improvements for the learners and their metacognitive development, we need to revisit longer-term outcomes via our use of the EMWPREP tracking database. Tracking both progression into HE and outcomes beyond HE is a long-term commitment but will further strengthen our assumptions that supporting the development of metacognitive strategies does indeed lead to improved outcomes. The WA team are currently working with the Student Engagement and Enhancement Team at UoD on a transition project that is designed to run focus groups with current UoD students around the effectiveness of WA interventions they received in primary, secondary and sixth form. TRS will form part of this process for learners who begin year 10 and year 12 in AY 2023-24. This will enable us to provide more robust evidence of the effectiveness of the TRS programme on those learners who have engaged in the programme and who do progress to university.

In terms of the activity itself, we need to ensure we manage expectations of what the activity is for and how it will benefit learners. Qualitative constructive responses indicated that learners' experience of university was hindered by the sessions being information heavy. This was consistent with the constructive feedback provided by the teachers who attended.

To improve the learner's experience, we should consider implementing more group work and discussions, provide longer breaks between sessions, provide a reflective journal that the learners can use after every session, and access to further information which they can use post event. The use of reflective journals has been positively used as both an evaluation method and a way to improve metacognitive strategies (Girgin, 2020; Yadav, 2022; Dorit and Nirit, 2020) and would also provide us with another qualitative method which we could utilise to effectively evaluate the sessions and further strengthen our mixed methodology approach.

Finally, we have been limited by the number of staff available to deliver the programme, due to the size of the team. We have therefore considered and sought ways to extend the programme to reach more learners beyond Derbyshire. To expand the programme, we have collaborated with our local Uni Connect partnership, the Derbyshire and Nottinghamshire Collaborative Outreach Partnership (DANCOP), to deliver additional TRS sessions in AY 2023-24 to schools in Nottingham and Nottinghamshire.

Conclusion

This chapter has put forward the emerging findings from the UoDs, TRS programme, a raising attainment programme delivered to Year 10 and Year 12 pupils in Derby City and areas of disadvantage in Derbyshire. This programme has been discussed within the context of institutional, local, and political drivers, with an analysis of the socio-economic, demographic and geographic factors which have influenced its development.

The emerging findings have shown a positive impact on the learner's higher order thinking skills, evidenced through significant increases in confidence by attending learners in their critical thinking, reflection, and research abilities across both year groups. There were also positive reflections by the learners, further indicating that they had understood the content and felt confident to apply the necessary skills both in their current and future studies. These outcomes support a growing research evidence base that metacognitive and self-regulation strategies have a positive impact on attainment.

However, the chapter has also highlighted challenges in the currently short-term nature of evidence collection. The WA team would benefit from additional evaluation methods to enable them to evidence, more robustly, that learners understand the cognitive processes involved in TRS and have applied these to positive effect in the classroom. This can be achieved by ensuring that the team constantly review the ToC and embed further evaluation methods, such as focus groups and long-term tracking into the mixed methods framework for this programme.

There are also elements of the sessions which require improvement such as increasing the amount of group work which, alongside the constructive feedback, has been shown to improve independent thinking and motivation in the classroom (Vaca et al., 2011). Finally, in terms of delivery, due to the emerging positive findings of the effect on attainment raising, and the government driver for universities to support raising attainment in schools, the team would do well to further explore opportunities to collaborate, such as with DANCOP, to increase the reach of the programme beyond Derby City and Derbyshire.

Overall, this chapter has been able to address the question of where and how universities can support schools with attainment raising and it can be asserted that the benefits of supporting learners to develop metacognitive and self-regulated learning strategies far outweighs the presented challenges, for both university delivery staff and the learners themselves. The programme has also shown that approaching attainment raising by focusing on reflective, critical thinking and self-regulated learning has been far more effective than previous attempts by the University of Derby's WA team at attainment raising via revision skills sessions.

Finally, to further build the sector evidence base of what works, the following areas for further research are proposed: the long-term impact of metacognitive and self-regulated learning on attainment; measuring success and impact through a mixed methods approach; the use of effective evaluation methodologies in social science research; and the impact of government policy on university outreach activity.

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Think, Reflect, Succeed: Analysis of the University of Derby's approach to effective attainment raising outreach with secondary-age learners

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