



THE BEHAVIOURAL
RESEARCH CENTRE
FOR ADULT SKILLS & KNOWLEDGE

Retention and Success in Maths and English

A Practitioner Guide to Applying Behavioural Insights

Susannah Hume, Fionnuala O'Reilly, Bibi Groot, Eliza Selley, Jessica Barnes, Xian-Zhi Soon,
Raj Chande, Michael Sanders

February 2018

Table of Contents

EXECUTIVE SUMMARY.....	4
Summary of the ASK Retention and Success RCTs.....	8
ACKNOWLEDGEMENTS	10
PART ONE: ABOUT THE RESEARCH	11
1.1. The Behavioural Research Centre for Adult Skills & Knowledge	11
1.2. Barriers to retention and success	12
1.3. Applying behavioural insights to retention and success.....	14
1.4. Beyond EAST: deeper barriers to success	14
1.5. Knowing what works to improve outcomes for learners	15
PART TWO: APPLYING BEHAVIOURAL INSIGHTS IN FURTHER EDUCATION.....	16
2. Principle 1: Remind and encourage	16
2.1. The power of prompts	16
2.2. How to create encouraging reminders	17
2.3. In practice: Text message reminders lift attendance and achievement.....	18
3. Principle 2: Promote social support networks	20
3.1. Help friends and family support learners more effectively	20
3.2. In practice: helping friends and family support their learner	21
3.3. How to craft supportive texts messages to engage friends and family to support learners	23
3.4. Foster social commitments between classmates.....	25
3.5. In practice: buddy incentives increase retention in basic skills courses.....	26
4. Principle 3: Create a feeling of belonging in the classroom.....	29
4.1. Help learners identify intrinsic motivations for learning.....	29
4.2. In practice: helping soldiers identify a purpose for learning.....	31
4.3. Reduce feelings of threat in the classroom	33
4.4. In Practice: a short online writing exercise can lift achievement	35
4.5. Create a positive dialogue between learners and their learning environment.....	37
4.6. How to foster positive learner interactions	38
5. Principle 4: Develop skills beyond English and maths.....	40
5.1. What do we mean by 'essential life skills'?	40
5.2. 'Grit': passion and perseverance for long term goals	42
5.3. In practice: boosting learners' 'Grit' through online modules.....	43
5.4. How to help learners build their essential life skills	44

6.	How to implement behavioural insights in college classrooms	46
6.1.	Before learners arrive	46
6.2.	In the first week	47
6.3.	During term time	48
6.4.	Before and during breaks	48
6.5.	Before exams	48
6.6.	The importance of testing	49

Executive Summary

Numeracy and literacy are essential skills required for furthering education, succeeding at work and indeed navigating everyday life, yet around a quarter of adults are operating at below the level expected of a secondary school student.

In 2014, the Department for Business, Innovation and Skills funded the Behavioural Insights Team to create the Behavioural Research Centre for Adult Skills and Knowledge (ASK). The aim of ASK was to use behavioural science and rigorous evaluation to test different ways of supporting learners aged 16 years or older in their pursuit of maths and English skills.

On the basis of our findings and the broader academic literature, we have identified four principles policymakers and practitioners can implement to improve retention and success rates. For each, we provide 'how to' guides for practitioners to implement with their own learners. Below we summarise each principle and note our most relevant trial results. This is intended as a starting point, and a platform for further research in collaboration with those who ultimately will deliver the change required – practitioners, policymakers and learners themselves. Like any research though, variations to the approaches reported in this document may increase or decrease the effect of the intervention. Readers should be mindful of this if they are looking to adapt the interventions for their particular context. The Department for Education has separately published a full research report of ASK's work, [*Improving engagement and attainment in maths and English courses: insights from behavioural research*](#).

Principle 1: Remind and encourage

Learners with low numeracy and literacy levels are likely to need support developing attendance and study habits. Text messaging is a scalable and cost-effective way to provide this support.

- ◆ In one of our trials, texting further education (FE) learners encouragement and reminders improved attendance by 22 percent (7.4 percentage points, 34.0 to 41.4 percent) and improved the proportion passing all their exams by 16 percent (8.7 percentage points, 54.5 to 63.2 percent).
- ◆ Even in trials of our deeper interventions, we used text messages to reinforce their core content on weekends or during breaks.

Principle 2: Promote social support networks

Many learners lack the continuous encouragement needed to persevere with their studies, even though they may have friends, family and acquaintances who would be willing to help. These support networks can be mobilised to great effect to improve engagement with learning.

- ◆ Texting a FE learners' friends and family prompts to encourage the learner improved attendance by 5 percent (3.2 percentage points, from 63.5 to 66.7 percent) and achievement by 27 percent (5.9 percentage points, from 22.2 to 28.1 percent).
- ◆ In a separate trial with parent learners at Children's Centres, financial incentives requiring the attendance of a learner *and* a nominated classmate improved attendance by 73 percent (31.7 percentage points, from 43.6 to 75.3 percent).

Principle 3: Create a sense of belonging in the classroom

Learners in numeracy and literacy courses may feel uncomfortable in the learning environment due to previous experiences in education. We found that a short, but well-designed reflective writing exercise can help learners to overcome these anxieties and improve learning outcomes.

- ◆ An exercise where FE learners reflected on and wrote about their personal values improved achievement by 25 percent (4.2 percentage points, from 16.7 to 20.9 percent).
- ◆ Separately, Army learners prompted to reflect on the relevance of their learning to their broader goals did better on their exams, though further testing with additional learners is required.

Principle 4: Develop skills beyond English and maths

Research shows that non-cognitive skills such as self-discipline and creativity can be as important as cognitive ability for lifetime success, though our interventions delivered mixed results.

- ◆ A set of exercises targeting FE learners' 'Grit' (i.e. their ability to persevere towards long run goals) improved attendance for the first half of the year, but this effect was not sustained.

How to implement these insights in practice

Improving learner retention and success through behavioural science requires an ongoing approach throughout the learning process.

- ◆ **Before learners arrive:** organisations should consider contacting learners as soon as they have registered, and keep in contact until they arrive. Informal contact from (a) a course tutor, or (b) a

past learner may be more likely to be effective than for example, formal contact from a senior administrator.

- ◆ **In the first week:** setting the right tone for the class by prompting learners to think about their values and how the course can help them achieve their goals. Foster social commitments between classmates, and help learners access their own social support networks.
- ◆ **During term time:** maintain regular, encouraging contact with learners (for example, via text message), and continue to help learners' social networks to support them.
- ◆ **Before and during breaks:** remain in contact so learners don't lose their connection with the college while they are away from it.
- ◆ **Before exams:** simple, supportive prompts focused on (a) reducing feelings of threat, and (b) on helping learners plan for their exams (e.g. how to get there, what to bring, how to study) can help learners enter the exam room in a positive frame of mind.

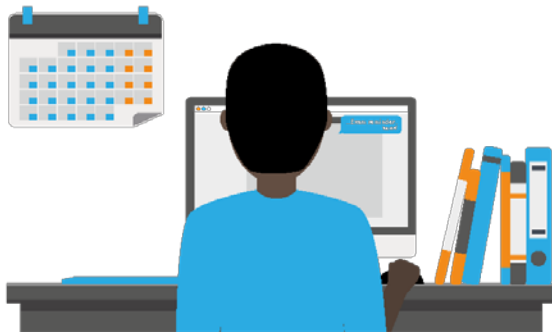


Applying Behavioural Insights to Retention and Success in Maths and English

Principle 1:

Remind and encourage

Timely prompts can help motivate learners, and help them engage with their learning and build study habits. Text messaging is a scalable and cost-effective way of providing this support.

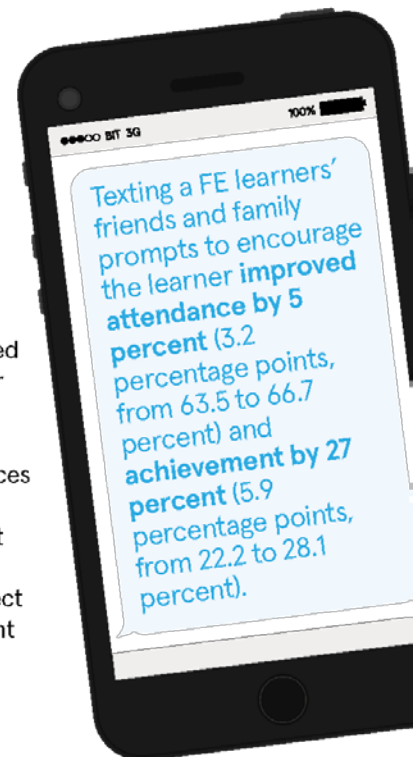


In one of our trials, texting further education (FE) learners encouragement and reminders improved attendance by 22 percent (7.4 percentage points, 34.0 to 41.4 percent) and improved the proportion passing all their exams by 16 percent (8.7 percentage points, 54.5 to 63.2 percent).

Principle 2:

Promote social support networks

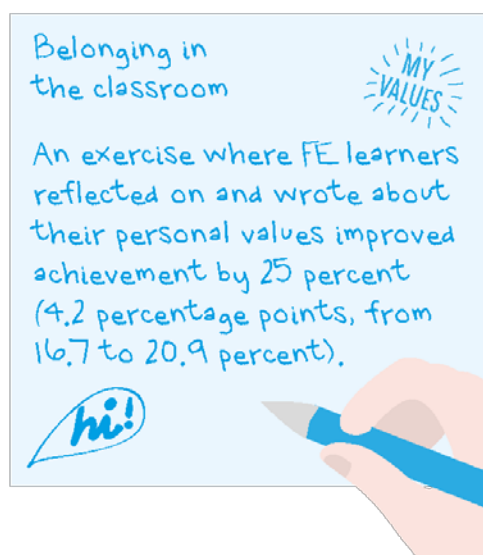
Many learners lack the continuous encouragement needed to persevere with their studies, even though they may have friends, family and acquaintances who would be willing to help. These support networks can be mobilised to great effect to improve engagement with learning.



Principle 3:

Create a sense of belonging in the classroom

Many learners in maths and English courses may feel uncomfortable in the learning environment due to their previous educational experiences. We found that a short, but well-designed reflective writing exercise can help learners to overcome these anxieties and improve learning outcomes.



Principle 4:

Develop skills beyond maths and English

Research shows that essential life skills such as self-control and emotional intelligence can be as important as cognitive ability for lifetime success.

A set of exercises targeting FE learners' 'Grit' (i.e. their ability to persevere towards long run goals) improved attendance for the first half of the year, but this effect was not sustained.



Summary of the ASK Retention and Success RCTs

Table 1: Summary of the ASK Retention and Success RCTs

Trial	Description	Result
Trial 1: Text Messages to Improve Attendance and Success Trial	This trial used weekly text messages to both help students plan for upcoming events such as returning to college after a break, or their exams, and to provide them with encouragement in the intervening weeks.	<ul style="list-style-type: none"> ◆ A 22 percent increase in attendance (7.4 percentage points, from 34.0 to 41.4 percent) amongst those who received the text messages when compared with the control group. ◆ Learners who received the text messages were 16 percent more likely to pass all their exams (8.7 percentage points, from 54.5 to 63.2 percent).
Trial 2: Study Supporter and Project SUCCESS (follow-up)	We asked learners to nominate people they would like to support them in their studies. These 'study supporters' were then texted weekly prompts to encourage the learner who nominated them. The texts contained planning tips, upcoming deadlines, course content, academic resources and exam dates.	<ul style="list-style-type: none"> ◆ The programme of texts to study supporters resulted in increased attendance of 5 percent (3.2 percentage points, from 63.5 to 66.7 percent) for those whose Study Supporters were texted, compared to those who opted in but were assigned to the control. ◆ We also found an increase of 27 percent in achievement (5.9 percentage points, from 22.2 to 28.1 percent) in the study supporter group compared to the control. ◆ The follow-up study, Project College SUCCESS, found that a programme of texts to both study supporters and students improved attainment rates by 24 percent (6.1 percentage points, from 21.1 to 26.2 percent) in GCSE results, compared to the control.

Trial	Description	Result
Trial 3: Children's Centre Buddy Incentives Trial	We worked with Children's Centres classes in maths, English, or related short courses. In one group, the parents received a small gift card depending only on their own attendance; in the other, the gift card depended on both their attendance, and that of their class 'buddy'. There was also a group where parents were paired with buddies, but without a reward.	<ul style="list-style-type: none"> ◆ We found that both the individual and buddy incentives significantly improved attendance in classes. The higher-performing buddy incentive led to increased attendance of 73 percent (31.7 percentage points, from 43.6 to 75.3 percent), compared to the control.
Trial 4: Purpose for Learning	We tested a motivation intervention, which used a combination of social norming and self-persuasion, and tested it with the British Army to encourage soldiers to identify self-relevant reasons they should engage with the course.	<ul style="list-style-type: none"> ◆ We found indicative evidence that the soldiers who completed the 'Purpose for Learning' exercise were more likely to pass their exam; however, owing to the small sample size in this trial, this result requires further testing.
Trial 5: Values Affirmation	We used a 'values affirmation' exercise prompting learners to reflect on their personal values – the aspects of their lives that make them feel happy or give meaning to their situation, which can serve as a means of reducing the extent to which they feel that their self-identity is under threat.	<ul style="list-style-type: none"> ◆ We did not find a statistically significant impact of the intervention on attendance. ◆ However, we found that the intervention improved achievement by 25 percent (4.2 percentage points, from 16.7 to 20.9 percent).
Trial 6: Grit	We tested a grit intervention, to address learners' misbeliefs about their capabilities, and to equip them with the tools they need to persevere. The grit intervention is underpinned by two theories – 'Deliberate Practice' and 'Expectancy Value theory'.	<ul style="list-style-type: none"> ◆ In the snapshot analysis at 10 weeks, we observed an increase in attendance among those who had undertaken the modules, but in the full year this effect is no longer statistically significant. ◆ We did not find a statistically significant effect on achievement in courses.

Acknowledgements

The Behavioural Research Centre for Adult Skills and Knowledge (ASK) has been fortunate to work with many collaborators. We acknowledge their contributions in the relevant sections of this document, but wish to also acknowledge the insight, support and guidance they provided to the overall work programme.

- ◆ We would like to thank our collaborators for their invaluable intellectual contributions, tireless enthusiasm, guidance and patience. This work would not have been possible without them. In particular we are grateful to Professor Geoffrey Cohen and Michael Schwalbe, Stanford University, Professor Angela Duckworth and Dr Lauren Eskreis-Winkler, University of Pennsylvania, Professor Michael Luca, Harvard Business School, Professor Todd Rogers, Harvard Kennedy School, Professor Silvia Saccardo, Carnegie Mellon University, Dr Johannes Eichstaedt and Professor Andrew Schwartz as well as the 'World Wellbeing Project' team, University of Pennsylvania, Professor Heather Kappes and Professor Barbara Fasolo and Dr Jeroen Nieboer, London School of Economics and Political Science, Professor Sarah Smith, University of Bristol, Professor Syon Bhanot, Swarthmore College and David Mallows, Institute of Education, University College London.
- ◆ Thanks are also due to our colleagues (past and present) at the Department for Education (DfE) including Catherine Paulson-Ellis, Eoin Parker, Helen McDaniel, Frank Bowley, Carl Creswell, Jo-Anna Irving, Richard Ward, Yeolanda Lopes, Gillian McFarland, Laura Reed and Alex Barker.
- ◆ We would like to express our appreciation to the collaborating organisations who played such a vital role in making these projects happen, including the British Army, the Association of Colleges, not to mention the dedicated staff at the colleges, businesses and Children's Centres who went the extra mile to help us deliver this research. Thanks also to all those that participated in the research.
- ◆ Lastly, at the Behavioural Insights Team (BIT) we would like to thank Elspeth Kirkman, Dr David Halpern, Owain Service, James Watson, Miranda Jackman, David Nolan, Alex Tupper, Dr Oana Borcan, Sean Robinson, Professor Netta Barak-Corren, Professor Elizabeth Linos, Dr Karen Melrose, Lucy Makinson, Pieter Cornel, Jessica Hunt, Ed Fitzhugh, Dr Pantelis Solomon, Chris Larkin, Jessica Heal, Sophie Odenthal, Samuel Hanes and everyone else who has contributed over the last three years.

Part One: About the research

1.1. The Behavioural Research Centre for Adult Skills & Knowledge

In 2014, the Department for Business, Innovation and Skills (BIS), funded the Behavioural Insights Team (BIT) to create the Behavioural Research Centre for Adult Skills & Knowledge (ASK), with the aim of using behavioural insights and rigorous evaluation to test different ways of supporting learners in their pursuit of English and maths skills in England. 'Behavioural insights' is the application of findings from behavioural science about how we systematically deviate from the rational economic model. Many of us will know this from our day to day experiences – we can often behave in ways that do not serve our best interest. In the context of education and skills, behavioural insights can help us understand why learners don't study for important exams or even attend class, and can also help us design interventions to improve these behaviours.

This report presents cross-cutting insights from all strands of work that shed light on ways to help those already engaged in learning (primarily in FE, but also in other settings) stay engaged and ultimately succeed. ASK research spanned 23 projects across different learning settings, and involved tens of thousands of learners all over England.

The Department for Education (DfE) has separately published a full Research Report of ASK's work, *Improving engagement and attainment in maths and English courses: insights from behavioural research*.¹ That report outlines the findings from all strands of ASK's research, including the technical details of the research mentioned in this report. Another DfE released report looking at the area, *Effective practice in the delivery and teaching of English and Mathematics to 16-18 year olds*² was released in November 2017.

Initially, ASK was specifically interested in how to support adult learners (defined as aged 19 and above). However, the ASK remit was expanded to include 16-18 year olds pursuing these qualifications in light of policy changes to help increase maths and English levels.

¹ Available at: <https://www.gov.uk/government/publications/improving-engagement-and-attainment-in-maths-and-english-courses>

² Department for Education (2017), *Effective practice in the delivery and teaching of English and Mathematics to 16-18 year olds*. Retrieved from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/662470/English_and_Mathematics_to_16-18_year_olds.pdf

Recognising the limited time practitioners might have, this report also includes simple ‘how to’ guides so readers can go implement these interventions themselves. We highlight practical considerations and insights from our work, and ways to think about adapting and implementing the insights specifically in the college setting.

These ‘how to’ guides can be found in the last part of each section. In addition, section 6 focuses specifically on the practicalities of implementing behaviourally-informed interventions in college classrooms. These suggested approaches are inspired by the findings of ASK and the broader literature in the area.

1.2. Barriers to retention and success

There are many reasons why improving literacy and numeracy is a complex challenge. The providers we spoke to identified low attendance as an issue that limits engagement and success.

There is no sector-wide data available on reasons why learners do not attend their classes or fail to achieve their qualifications, although individual colleges make efforts to explore and understand the reasons in their cohorts. For instance, research with London colleges found that attendance across all courses ranged from 80 to 87 percent.³ However, baseline data obtained from colleges by BIT suggests that attendance, particularly in English and maths, can be markedly lower than this.⁴ Many colleges have focused their efforts on increasing attendance in order to ultimately improve achievement rates.

³ Ofsted. (2013). Improving attendance and punctuality. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/379085/Improving_20attendance_20and_20punctuality.pdf

⁴ Part of this discrepancy may be accounted for by differences in measurement practices.



Low attendance can also be a predictor of whether a learner will drop out. Informal discussions with prospective trial partner colleges suggested that learners drop out steadily throughout the year, with increased attrition observed after breaks such as Christmas, Easter, or mid-term breaks. We observed that attendance remained relatively high until the mid-term break, but dropped off considerably after that.

Education providers and government have implemented a range of strategies to address institutional and situational barriers, such as providing full subsidy for courses, offering night and workplace classes and community learning. These have had mixed results. One missing ingredient here may be the need to address psychological barriers, even among those learners who have already engaged with learning. Therefore, an important task for colleges and learning providers is to investigate targeted ways to help learners overcome the barriers they're facing, which is where we have focused in this report.

1.3. Applying behavioural insights to retention and success

Changing the 'choice architecture'

Based on our work and the wider academic literature, BIT has found that if you want to encourage a behaviour, you should make it Easy, Attractive, Social and Timely (EAST).⁵ We explain these principles below and provide an example of how we might use each to improve enrolment in an adult education course.

- ◆ **EASY:** make a behaviour easier by making it the default, reducing the hassle factor of taking the action, and by simplifying messages. For example, we might improve enrolment by making the administrative process less burdensome.
- ◆ **ATTRACTIVE:** attract attention to the message or behaviour through use of images, colour, personalisation and salient messages; and design rewards and sanctions for maximum effect. For example, we might frame participation in numeracy courses as an exclusive and temporary offer.
- ◆ **SOCIAL:** show that the majority perform the desired behaviour, and tap into people's social networks and social commitments. For example, a college might recruit further learners by asking current learners to enrol with their friends and family.
- ◆ **TIMELY:** prompt people when they are most likely to be receptive, consider immediate costs and benefits, and help people plan their response to barriers to the behaviour. For example, colleges should consider recruitment activities that are aligned with when potential learners are most likely to want to enrol, such as in January to coincide with New Year resolutions.

The EAST framework provides a general practitioner's guide to thinking about how to work with the grain of human behaviour to encourage effective decision-making.

1.4. Beyond EAST: deeper barriers to success

The EAST framework can be useful for improving subconscious decision-making, but many barriers to learning run deeper than trivial administrative hurdles or the timely availability of information. Many 16–18 year olds and adults with low numeracy and literacy levels do not feel like they are

⁵ Behavioural Insights Team (2014). *EAST: Four Simple Ways to Apply Behavioural Insights*. Available at: http://www.behaviouralinsights.co.uk/wp-content/uploads/2015/07/BIT-Publication-EAST_FA_WEB.pdf.

effective learners, lack intrinsic motivation, and have a low sense of self-efficacy. These barriers present deeper challenges, requiring more intensive interventions than simple tweaks to the environments in which people are making decision (such as enhancing social support, section 3), and those that aim to get to these deeper constraints (for example, creating feelings of belonging, section 4, and building non-cognitive skills, section 5).

1.5. Knowing what works to improve outcomes for learners

Testing what works is essential. Although there are many ways to test the effectiveness of a programme in achieving a particular outcome, the gold standard is the randomised controlled trial (RCT). The strength of the RCT approach is that it enables the comparison of a group that has received the programme with a similar group that has not received the programme, to identify the causal effect of the programme on the outcomes of that group.

In this report, in order to measure our degree of confidence in these results, we use the concept of **statistical significance**. Statistical significance tells us the probability of finding a intervention's effect being the result of the intervention, and not the product of chance. The conventional level of statistical significance used is 5%, which means that there is a 5% chance of a "false positive" and there being no effect. If a result is significant at the 10% level, we say that our test provides weaker evidence that an intervention is effective.

Part Two: Applying behavioural insights in further education

2. Principle 1: Remind and encourage

Key points

- ◆ Learners, particularly those in non-compulsory education, may need support to develop the routines that lead to regular attendance and work habits.
- ◆ Text messaging is a cost-effective and efficient way to provide this support. Regular texts providing encouragement and alerting learners to the resumption of classes at the end of holiday periods can improve attendance and achievement.
- ◆ Helping people to anticipate and plan for even minor challenges (such as getting to college on time, or finding their calculator) can increase their ability to follow through on their intentions to attend courses.
- ◆ Alongside the reminder prompts, messages that also help increase a learner's sense of belonging at the college and those that help shape their mindset around learning can also be effective in boosting learner motivation and engagement.

2.1. The power of prompts

Often, something as small as a prompt or an encouragement is enough to make us follow through with an intention that might otherwise have lapsed.

Text messages are an inexpensive and scalable way of reaching learners at times when they can take advantage of information. There is a growing body of evidence to suggest that texting parents of school aged learners is an effective way to improve learner outcomes like grades.^{6 7} One study showed that learners who received behaviourally informed messages attempted and completed

⁶ Bergman, P. L. S., & Chan, E. W. (2017). Leveraging Technology to Engage Parents at Scale: Evidence from a Randomized Controlled Trial (No. 6493). CESifo Group Munich.

⁷ York, B. N., & Loeb, S. (2014). One step at a time: The effects of an early literacy text messaging programme for parents of preschoolers (No. w20659). National Bureau of Economic Research.

more credits than their peers who had not received messages.⁸ In another study, learners completed an online goal setting exercise and then received text messages reminding them of their goals and giving encouragement for successfully navigating through their courses. This improved attainment by half a letter grade.⁹

Beyond education, personalised text messages sent directly to participants have shown to be an effective way of improving health outcomes like increasing fruit and vegetable intake, reducing risky sexual behaviour¹⁰ and even weight loss.¹¹



2.2. How to create encouraging reminders

We would recommend that colleges tailor the intervention using their professional judgement and knowledge of their learners' needs. To help, we describe the underlying principles and provide instructions for implementation below.

We would suggest colleges wishing to send similar texts use the following process:

- ◆ Identify key dates, such as when holidays start and end, deadlines and exams.

8 Castleman, B. L., & Meyer, K. (2016). Can Text Message Nudges Improve Academic Outcomes in College? Evidence from a West Virginia Initiative. Center for Education Policy and Workforce Competitiveness, University of Virginia, Working Paper, (43).

9 <https://appam.confex.com/appam/2015/webprogram/Paper12684.html>

10 Suffoletto, B., Akers, A., McGinnis, K. A., Calabria, J., Wiesenfeld, H. C., & Clark, D. B. (2013). A sex risk reduction text-message programme for young adult females discharged from the emergency department. *Journal of Adolescent Health*, 53(3), 387–393.

11 Napolitano, M. A., Hayes, S., Bennett, G. G., Ives, A. K., & Foster, G. D. (2013). Using Facebook and text messaging to deliver a weight loss programme to college learners. *Obesity*, 21(1), 25–31.

- ◆ Write texts for those key dates in advance, maintaining a positive tone, and where possible informing learners of the key dates.
- ◆ For other weeks, write texts of encouragement focused on fostering a feeling of belonging for the learner (see section 4).
- ◆ It usually helps to draft messages with a colleague. Read your suggestions to each other. Would they feel good to receive? You might also ask for feedback and suggestions from your learners. They will probably have the best ideas of all.

2.3. In practice: Text message reminders lift attendance and achievement

We tested the value of applying these insights in further education by texting reminders of the resumption of classes, and encouragements to persist with the course, throughout the year. Working with two colleges, we developed a programme of 39 messages, over 37 weeks, which were sent on behalf of their college. Approximately half the learners got the messages, and the other half were in our 'control' group, and did not receive the messages.

The main themes of the messages were around mindsets,¹² belonging, social support and reminders (e.g. upcoming exams). Table 2 contains a couple of examples of the text messages used. The messages provided ongoing support with simple suggestions for how learners could keep going with their studies despite setbacks.

Table 2: Examples of the Text Messages

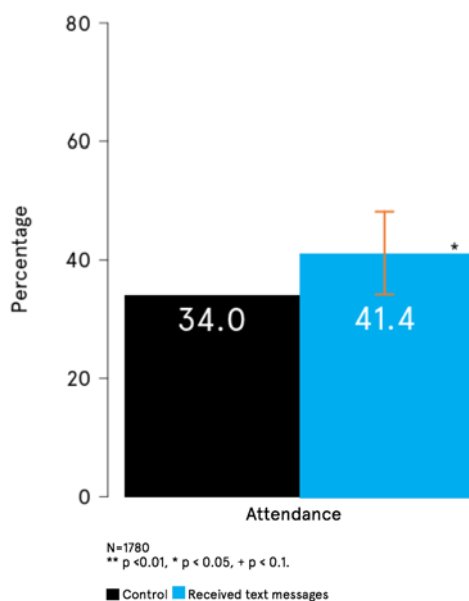
Theme	Example message
Growth mindset	[firstname], no one is born good at [subject]. Like any skill, with effort and time you will improve. [college]
Belonging	Hi [firstname], we are so pleased to have you back alongside your classmates in 2015! What do you want to achieve this year? [college]

¹² Mueller, C., & Dweck, C. (1998). Praise for intelligence can undermine children's motivation and performance. *Journal of Personality and Social Psychology*, 75(1), 33–52.

Over the full year, we found a 22 percent (or 7.4 percentage point) improvement in attendance amongst those who received the text messages when compared with the control group (see Figure 1). Looking at overall achievement, we found that learners who received the text messages were 16 percent more likely than those in the control group to pass all their exams – a 8.7 percentage point increase (see Figure 2). The results of this trial suggest that texting learners encouragement using ideas from behavioural science is a simple and cost effective way to increase motivation and in turn, improve both attendance and achievement. Were the texts to be delivered for the full academic year, the intervention would cost less than £5 per learner, including the cost of the messages themselves as well as administrator time.

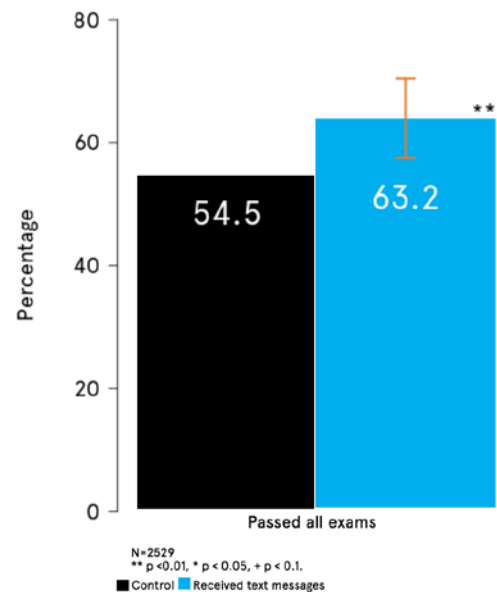
The results in detail

Figure 1: Full Academic Year (36 weeks) – Average maths



and English class attendance

Figure 2: Full Academic Year (36 weeks) – % of Students



who Passed All Their Exams

3. Principle 2: Promote social support networks

Key points

- ◆ Learners succeed more easily with the support of their friends and family.
- ◆ We can foster supportive learning environments using low-cost and behaviourally-informed interventions. Informing parents and friends about what topics the learner is studying, alerting them when exams are coming up, and reminding them to provide emotional support can spark supportive communication, in turn improving attendance and attainment.
- ◆ Both leveraging existing natural ties and introducing new ties are effective approaches to improving educational success.
- ◆ Peer influence can also be an effective way to boost attendance and educational success. We hate the feeling of letting someone down. This basic principle can be leveraged with ‘buddy incentives’, where if one of the two doesn’t turn up to class, neither earns the bonus.

3.1. Help friends and family support learners more effectively

For many people, the support of friends and family is vital to educational success. Young people who say they have access to supportive parents, peers and teachers do better in school than those who cannot identify such sources of support¹⁴ and having meaningful interactions with parents, siblings, other relatives and friends predicts positive outcomes.¹⁵ Yet, it is often challenging for those people to know how to get involved in the learner’s education in the most effective way. For example, they may rarely interact with tutors or other parents, or not have access to relevant information about the learner’s

Social support refers to an individual’s perception of general support or specific supportive behaviours (available or acted on) from people in their social network.¹³

¹⁴ Wentzel, K. R., Russell, S., & Baker, S. (2016). Emotional support and expectations from parents, teachers, and peers predict adolescent competence at school. *Journal of Educational Psychology*, 108(2), 242.

¹⁴ Wentzel, K. R., Russell, S., & Baker, S. (2016). Emotional support and expectations from parents, teachers, and peers predict adolescent competence at school. *Journal of Educational Psychology*, 108(2), 242.

¹⁵ Feeney, B. C., & Collins, N. L. (2015). A new look at social support: A theoretical perspective on thriving through relationships. *Personality and Social Psychology Review*, 19(2), 113–147.

course and progress. If we want to spark engagement, we need to ensure these key individuals (a) believe that they should be involved, (b) believe that they have the ability to help the learner succeed, and (c) feel invited to be involved by the college, teacher or learner. Of course, they also need to perceive that they have the knowledge, time, skills and energy to take an active role.¹⁶

The literature on social support and academic motivation points to engagement as a mechanism between the provision of support and improved educational success.¹⁷ An increase in the quality and quantity of supportive conversations between supporters and learners would trigger a recursive process of improved self-confidence, motivation and effort, in turn leading to better educational outcomes.

3.2. In practice: helping friends and family support their learner

We worked with Professor Todd Rogers at Harvard Kennedy School to develop an intervention aimed at strengthening supportive communication between FE college learners and their peers and families. We trialled the intervention first in the 2015/16 academic year, and ran a follow-up RCT the following year.

Learners at participating colleges were asked to nominate one or two 'study supporters': adults they thought would be good at offering them support throughout the year. Half of the learners' study supporters then received texts over the full academic year, and the other half did not receive text messages from us (business as usual; the college could still contact parents separately).

The texts encouraged the supporters to ask the learner how revision was progressing, to praise the learner's effort and to wish the learner luck ahead of exams and assessments. See Table 3 for example texts.

¹⁶ Hoover-Dempsey, K. V., Walker, J. M., Sandler, H. M., Whetsel, D., Green, C. L., Wilkins, A. S., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *The elementary school journal*, 106(2), 105-130.

¹⁷ Cohen, S., Underwood, L. G., & Gottlieb, B. H. (Eds.). (2000). *Social support measurement and intervention: A guide for health and social scientists*. Oxford University Press.

Table 3: Examples of Study Supporter Programme text messages

Message theme	Example
Course content	<i>Hi [Study supporter firstname], [learner firstname] is learning about statistics. Please ask [him/her] to explain the difference between the mean and the median and how to calculate them. Thanks, [College name]</i>
Advance notice of upcoming exams	<i>Hi [Study supporter firstname], as the exams are happening soon, on May 26th and June 9th, please ask [learner firstname] if [he/she] is practicing previous years' exam papers. That will really help [him/her] understand how questions are phrased and how to get full points. Thanks, [College name]</i>
General positive conversation prompts	<i>Hi [Study supporter firstname], it's Easter break for [learner firstname] over the next two weeks! Please ask [him/her] what was the most surprising or useful thing [he/she] learnt in [maths/English] class this term. Thanks, [College name]</i>

All supporters were sent a mix of messages from the above categories, one text message per week for the full academic year (a total of 35 messages). Using full-year attendance, the texts resulted in an increase of 5 percent (or 3.2 percentage points) for those whose Study Supporters were texted, compared to those who opted in but were assigned to the control (see Figure 3) .

The results in detail

Figure 3: Average maths and English class attendance at mid-year (12 weeks) and full-year (36 weeks)

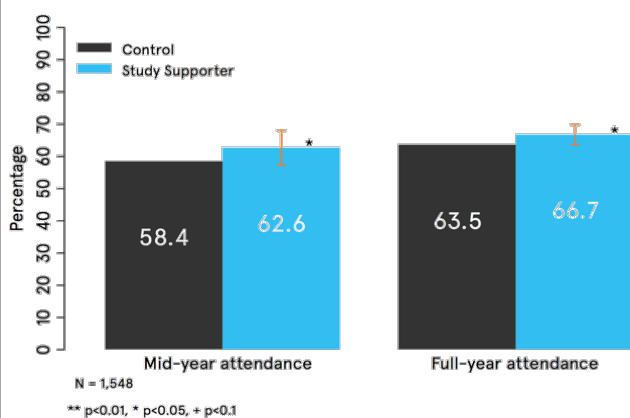
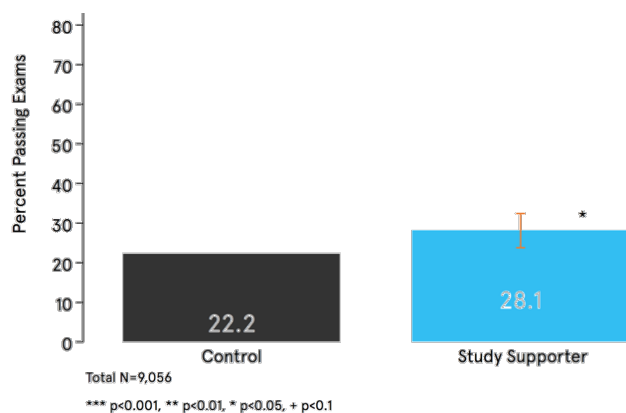


Figure 4: Full academic year (36 weeks): % of students who passed their English/maths qualification



On achievement, 28.1 percent of those whose study supporters were texted received a good pass (i.e. an A*-C in their GCSE, or a 'pass' on their Functional Skills course), compared to 22.2 percent in the control, a difference of 27 percent – or 5.9 percentage points (see Figure 4). These findings show that texting friends and family can be a powerful way to increase attendance and achievement. In fact, the impact of the supportive text messages on achievement is even greater than that on attendance; this implies that, in addition to encouraging learners to show-up to lessons, the intervention may also have had a broader impact on how learners engaged with their courses.

ASK is engaged in scaling and further testing these results, firstly through Project SUCCESS (result in Table 1) and secondly through the Education Endowment Foundation who has funded a scale-up of Project SUCCESS across 31 FE colleges. The trial went live in September 2017, and reaches 4,000 students and their supporters. This is being done through an online texting platform that BIT has developed aimed at making it easier to adopt the findings of the research.

Student reflections on the project

Learners described how they were aided by a supportive network to help them succeed at college; and that the text messages enabled them to have more frequent and in-depth conversations about their learning. For example, a 17-year old female student told us that:

"I don't think I would have got through the year without having someone to support me. She'd get a text about if I had an exam. She'd be like; "you've got your exam" and "revise it" and bring it up which was good because I didn't use to talk about my exams. But this year I have, and she's been really supportive with it."

3.3. How to craft supportive texts messages to engage friends and family to support learners

Often learners do have family or friends who can offer them support but this support does not normally relate to learning.

One way to increase the friends' and family' involvement with learning is through something like the Study Supporter intervention described above. To implement the Study Supporter Programme yourself, follow the steps outlined below. Remember, **the key is to make the texts as specific as you can and to be as supportive as possible**. If you're struggling for ideas, think about your learners. What do you wish they were talking about with their friends and family outside of college?

- ◆ You need to plan your texts for the year. With your heads of department, write out the key events and dates in the learner's year. Try to include any exams, deadlines, holidays, trips, college parties, or anything else.
- ◆ Next, spend some time writing texts for your learners' study supporters which coincide with those key dates. Try to make them as specific as possible.
- ◆ You will probably have plenty of weeks in the year without any key events, but aim to send the Study Supporter texts every week.
- ◆ You will need to get phone numbers for study supporters from your learners. We would advise you to spend the first 10 minutes of their first lesson explaining the programme and giving them a form to provide their supporter's name and number.
- ◆ It is important for learners to consider carefully whom they nominate to be their study supporter. The person they choose is ideally an adult, empathetic, and someone the learner feels comfortable discussing learning and work with. They should also be someone that will be in learner's life for the period of their study programme.
- ◆ Next you will need to programme the texts. You can do this week by week, or all in advance. It's important that these text messages are reliable, so don't start on a Study Supporter Programme if you are not confident you can carry it through. This is why we've suggested developing the programme of texts before you ask learners to enrol.

Crafting behaviourally informed text messages

- ◆ Ensure the message is easy to act on. If sending text messages, these need to be easy to understand (e.g. replace 'controlled assessment' by 'exam') and not require high levels of maths or English (e.g. 'explain sin, cos and tan' may put study supporters off from discussing the text message)
- ◆ Strive to make engagement feel meaningful and familiar. Tutors could sign off the text message with their name, and let the social network know their involvement is appreciated.
- ◆ Contextualising English and maths is a great way to get people involved. A conversation about the latest article the learner has read in the newspaper or when they last calculated a discount in the shop can be easier to initiate, than a conversation about punctuation or quadratic equations.

3.4. Foster social commitments between classmates

There is growing evidence that people's emotions and social preferences such as reciprocity, altruism, envy and guilt can be powerful motivators. These 'moral sentiments' motivate people to take into account others' interests.¹⁹ For example, someone might be inclined to show up to a

We are much better at keeping commitments we have made to others, than at keeping commitments we have made to ourselves.

Other people function as a type of commitment device, as the consequence of failing to reach one's goal is invisible when you've made the commitment to yourself only, but visible (and therefore more disappointing) when you made a promise to someone else.¹⁸

session in the gym because they agreed to go with a friend and they would feel guilty if they stood them up. Alternatively, the person might feel good for attending the gym because their friend has done them a favour recently. In both of these cases, social preferences strengthen the person's motivation to go to the gym through guilt (first example) and reciprocity (second example).

We've written in previous section about the power of fostering learning-related commitments between

learners and their existing social support networks. However, there is also opportunity to foster supportive commitments between classmates. The literature on social networks suggests that people who are similar to us, or with whom we share a similar identity (e.g. learner) are particularly influential.²⁰

In the classroom setting, this could take a few forms:

- ◆ Having reciprocal interactions with a classmate (buddy) can help learners stay on track. For example, if the learner missed two classes in a row, they might feel inclined to drop out of the class because they are unsure if they would be able to catch up. Having a buddy in the classroom ensures that the struggling learner can request resources and advice without the barrier of having to face the tutor.

¹⁸ Rogers, T., Milkman, K. L., & Volpp, K. G. (2014). Commitment devices: using initiatives to change behavior. *JaMa*, 311(20), 2065-2066.

¹⁹ De Hooge, I. E., Breugelmans, S. M., & Zeelenberg, M. (2008). Not so ugly after all: when shame acts as a commitment device. *Journal of personality and social psychology*, 95(4), 933.

²⁰ Cialdini, R. B., & Garde, N. (1987). *Influence* (Vol. 3).

- ◆ Peer influence can be a powerful phenomenon.²¹ Being observed by others, and observing the behaviours of others, holding each other accountable and receiving feedback from each other can help both members of the peer group follow through with their goals.

Another area of research that shows strong and convincing effects on people's effort and goal-completion, is that of financial incentives.²² In the context of education, several intervention studies have found positive effects of incentives on learner performance.^{23 24} For example, in one experiment, college learners were rewarded for maintaining a passing grade throughout the academic year, which resulted in a 40 percent increase in course credits achieved.²⁵ If we were to combine these two powerful motivators, peers as commitment devices and financial incentives, we may be able to magnify the positive effects of each.

3.5. In practice: buddy incentives increase retention in basic skills courses

Community learning is an important element of the adult learning environment. For this reason, we were interested in ways to increase retention in courses held in these settings. These are hubs, based in the community, which offer a range of services and support to parents of young children. In recent years many Children's Centres have also started offering adult learning courses (including English and maths). Parents using children's centres might have specific motivations to begin improving their skills. For example, many learners cite helping their children with schoolwork as a motivation for improving their own skills.²⁶

We worked with 21 Children's Centres in England to test whether social commitments between classmates could increase engagement and effort towards the shared goal. Some learners received an individual incentive (they would get the money if they attended class), and some a buddy incentive (they would only receive a voucher for a particular financial amount if **both** turned up to class).

²¹ Kast, F., Meier, S., & Pomeranz, D. (2012). *Under-savers anonymous: Evidence on self-help groups and peer pressure as a savings commitment device* (No. w18417). National Bureau of Economic Research.

²² Lazear, E. P. (2000). The power of incentives. *The American Economic Review*, 90(2), 410–414.

²³ Angrist, J., Lang, D., & Oreopoulos, P. (2009). Incentives and services for college achievement: Evidence from a randomized trial. *American Economic Journal: Applied Economics*, 1(1), 136–163.

²⁴ Kremer, M., Miguel, E., & Thornton, R. (2009). Incentives to learn. *The Review of Economics and Statistics*, 91(3), 437–456.

²⁵ Barrow, L., Richburg-Hayes, L., Rouse, C. E., & Brock, T. (2014). Paying for performance: The education impacts of a community college scholarship programme for low-income adults. *Journal of Labor Economics*, 32(3), 563–599.

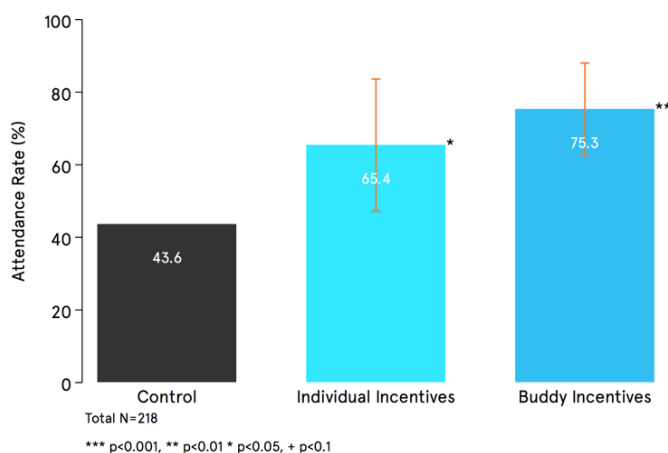
²⁷ Hidi, S., & Harackiewicz, J. M. (2000). Motivating the academically unmotivated: A critical issue for the 21st century. *Review of educational research*, 70(2), 151–179.

The programme was delivered as follows:

- ◆ Each learner was buddied up with another learner in the class randomly.
- ◆ Learners were then informed that they would receive £2.50 x total course length if they attended at least 60% of classes, or £5 x total course length if they attended at least 80%. For example, in a 10-week course with one class per week this would equate to receiving £25 (60% attendance) or £50 (80% or above).
- ◆ In the 'individual incentive' group, the learner's own attendance was sufficient to gain the prize. In the 'buddy incentive' group, learners would only obtain the financial reward if both buddies attendance was 80% or higher. Learners in the 'control' group were not told about the incentive.
- ◆ Learners also received a 'stamp card', which they shared with their buddy.

The results in detail

Figure 5: % of classes attended, for control and incentive groups



We found that both the individual and buddy incentives significantly improve attendance in classes. The higher-performing buddy incentive led to an increase in attendance of 73 percent, or 31.7 percentage points, compared to the control (see Figure 5). The buddy incentive performed significantly better than the individual incentive

The results of this trial suggest that a small financial incentive can significantly increase retention in English and maths related classes conducted in Children's

Centres. An incentive that incorporates a social dimension can be even more effective. We suggest that these insights in combination suggest the case for further investigation of the use of social incentives in learning settings, particularly community learning.

3.5.2. General principles to engaging learners' social networks

- ◆ Provide the learners themselves with tools to engage their support networks, such as discussion prompts, interesting facts, or materials they can take home and share.

- ◆ Provide opportunities within the course for learners to develop social ties and get to know each other.
 - Consider ways you can help to strengthen and cement these social ties; for example through pairing the same learners up for different exercises throughout the course or giving them some kind of joint target or goal.
 - Try to ensure these social ties provide encouragement and do not inadvertently reinforce negative attitudes. For example, avoid pairing disinterested or unmotivated learners with each other (especially if they already know each other outside of the course).
- ◆ Make people feel like a real team. Both in the Children's Centres and the Study Supporter trials, we encourage communication within pairs. Referencing the fact that they are 'teammates' or 'buddies' can help both parties to care not only about their own outcomes, but also that of the other.
- ◆ Consider how you can use friendship groups as a tool to increase recruitment into literacy and numeracy courses (especially in community learning settings). In many of the courses we observed, friends signed up together. In addition, when a financial incentive was available we saw word-of-mouth recruitment driving extra people into class. Even if an incentive is not an option, consider actively prompting people who sign up to courses to speak to friends or family who they think could benefit.

4. Principle 3: Create a feeling of belonging in the classroom

Key points

- ◆ How learners feel in the classroom, especially their motivation and their sense of security, can have a substantial impact on engagement and attainment.
- ◆ Those who lack intrinsic motivation for learning (because they feel they are responding to external incentives, or that they haven't chosen to be in the classroom) are particularly likely to be disengaged.
- ◆ For some learners, the classroom or exam environment can be perceived as threatening. When we feel under threat, some of our cognitive capacity goes towards experiencing this threat, which can make it difficult to concentrate, learn, or recall things we've learned.
- ◆ Short writing exercises that enable learners to reflect on how they're feeling can be effective ways of helping learners engage more positively in the classroom.
- ◆ Self-persuasion exercises (where learners identify their own values or reasons for learning) can help build intrinsic motivation that increases engagement with learning.

4.1. Help learners identify intrinsic motivations for learning

Understanding people's motivation for engaging with learning is essential for delivering effective education and for individuals to reap the benefits of their improved skills.^{27 28}

A person who is intrinsically motivated to engage with learning is more likely to expend effort,²⁹ perform better,³⁰

Intrinsic motivation: Motivation to perform an action arising from a personal desire or interest in doing something.

Extrinsic motivation: Motivation to perform an action for an external reason; for example in response to rewards, sanctions or requirements

²⁷ Hidi, S., & Harackiewicz, J. M. (2000). Motivating the academically unmotivated: A critical issue for the 21st century. Review of educational research, 70(2), 151-179.

²⁸ Other important factors include goals (performance vs. mastery) and individuals' interests.

²⁹ Skinner, E. A., Wellborn, J. G., & Connell, J. P. (1990). What it takes to do well in school and whether I've got it: A process model of perceived control and children's engagement and achievement in school. Journal of educational psychology, 82(1), 22.

³⁰ Miserandino, M. (1996). Children who do well in school: Individual differences in perceived competence and autonomy in above-average children. Journal of educational psychology, 88(2), 203.

less likely to drop out of the course³¹ and experiences greater psychological well-being.³² Additionally, intrinsic motivation is associated with greater learning transfer and skill acquisition.³³

Figure 6: Types of motivation and associated cognitions



Extrinsic incentives can undermine intrinsic motivation.^{34 35} Those who feel that an action has been forced on them, or that they are doing it for an externally-offered reward, are less likely to feel intrinsically motivated towards that action. However, motivation can also vary along a spectrum.³⁶

Many people who are in Level 2 English and maths classes are responding to extrinsic motivators, such the course being compulsory (in the case of young people retaking their GCSEs, jobseekers who have been referred in by the Job Centre Plus, and prisoners), or because they are required to in order to achieve a reward such as progression at work. This poses a substantial challenge to their engagement with, and retention of, the course material.

³¹ Vallerand, R. J., & Blissonnette, R. (1992). Intrinsic, extrinsic, and amotivational styles as predictors of behavior: A prospective study. *Journal of personality*, 60(3), 599–620.

³² Sheldon, K. M., & Kasser, T. (1995). Coherence and congruence: two aspects of personality integration. *Journal of personality and social psychology*, 68(3), 531.

³³ Fishbach, A., & Trope, Y. (2005). The substitutability of external control and self-control. *Journal of Experimental Social Psychology*, 41(3), 256–270.

³⁴ Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation.

³⁵ Lepper, M. R., Greene, D., & Nisbett, R. E. (1973). Undermining children's intrinsic interest with extrinsic reward: A test of the "overjustification" hypothesis. *Journal of Personality and social Psychology*, 28(1), 129.

³⁶ Deci, E. L., & Ryan, R. M. (2000). The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior. *Psychological Inquiry*, 11(4), 227–268.

4.2. In practice: helping soldiers identify a purpose for learning

We were interested in the experiences of learners who were in classes as a result of powerful extrinsic motivators, and worked with the British Army to understand one such group. The Army requires soldiers to have Level 2 English and maths qualifications to be eligible for promotion to Sergeant. Training is most usually delivered through relatively short, intensive programmes.

Although it is quite a unique cohort of learners, we believe that research with the Army is relevant for other contexts. Soldiers who haven't achieved their English and maths in secondary school have a common experience with those who are retaking those subjects in FE colleges, in that they may have had negative experiences with education. Based on this, we designed a trial aimed at improving soldiers' perceptions of the importance of developing sound English and maths skills – in the Army and in general. The 'Purpose for Learning' trial tested whether a short social-psychological intervention could enhance the soldiers' intrinsic motivation to learn more deeply, their engagement with the course, and their exam performance.³⁷

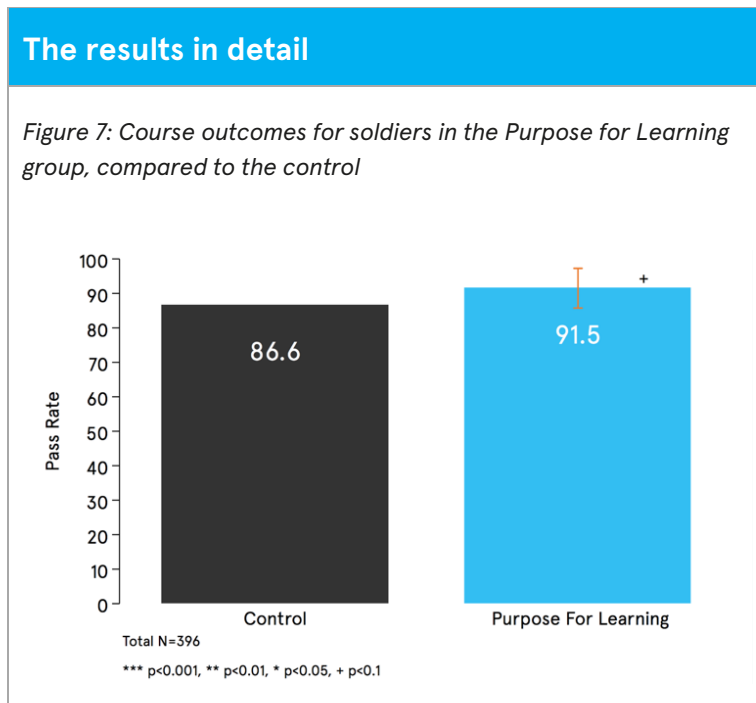
Participants were randomly allocated to either the 'Purpose for Learning' exercise, or a control exercise. The group in the control did a similarly structured exercise that asked them to think about their transition to the Army – an issue that was personal and salient, but that we expected wouldn't affect their motivation for learning.

³⁷ Yeager, D. S., Henderson, M. D., Paunesku, D., Walton, G. M., D'Mello, S., Spitzer, B. J., & Duckworth, A. L. (2014). Boring but important: A self-transcendent purpose for learning fosters academic self-regulation. *Journal of Personality and Social Psychology*, 107(4), 559.

Table 4: Description of the purpose for learning intervention

Stage	Description	Objective
Activating prosocial motivation	Soldiers were asked to write briefly on the question, "What are some ways that you think the world could be a better place?"	The objective of this is to put them in a more prosocial mindset by getting them to think about the prosocial concerns they have, and thereby focus on a broader purpose.
Self-persuasion	Soldiers were asked to write a testimonial similar to the ones they had just read, for future learners.	A powerful way to encourage someone to adopt a belief is to ask them to justify that belief to others. By writing the message oneself, the message becomes personal and self-persuasive.

We found that 91.5 percent of learners in the treatment group passed their Level 2 course, while in the control group 86.6 percent of learners passed: a difference of approximately five percent (Figure 7). This finding has weak statistical significance. However, we believe it could have implications for other groups of mandated learners, such as job seekers and prisoners, and whether a similar approach could be tested with these groups.



4.3. Reduce feelings of threat in the classroom

The challenges that may be faced by learners are wide-ranging, from learning the course content to adapting to the new environment, to fitting learning into adult life. However, different learners experience these challenges differently. For some, these challenges are just a part of learning – they are surmountable and even enjoyable. For others, these challenges link to deeper feelings of threat tied to negative experiences or self-concepts around learning.³⁸

This feeling of threat to one's self-integrity can be due to many factors, but one that has been the subject of particular research interest (as described later in this section) is social identity threat. In essence, it occurs when a person is concerned that they will be judged negatively due to particular perceptions (such as stereotypes) of their social group. Consequently, these feelings of threat challenge one's self-integrity, and being presented with this challenge might lead a person to avoid,

³⁸ Cohen, G. L., & Sherman, D. K. (2014). The psychology of change: Self-affirmation and social psychological intervention. *Annual review of psychology*, 65, 333–371.

rather than face, the challenge. It may even lead to a self-fulfilling prophecy where cognitive energy that could be used for learning is instead used to suppress feelings of threat.

The feeling that challenges faced in learning represent a threat to self-integrity is particularly prevalent among disadvantaged and marginalised groups, for whom formal education may have been a negative experience. If not addressed, this can perpetuate existing disadvantage, reinforce negative learner identities, and be passed from one generation to the next.

Over the past decade or so, interventions have been developed that are designed to protect learners against threats to their identity. One such intervention is called values affirmation (VA), or self-affirmation. Researchers hypothesised that prompting a person to reflect on their own core values – the things that matter most to them in their lives and that give their lives meaning – might reinforce the strength of that person’s identity such that they do not experience intense feelings of inadequacy or threat when faced with a challenge.³⁹

By spending some time thinking about what makes them who they are, and what they care about, that person might then have an increased ability to take on challenges. This approach was found to be effective in reducing stereotype threat among African-American learners in academic settings,⁴⁰ and improving the grades of female university learners studying engineering and physics.^{41 42} Due to its impact in educational environments, VA was a strong candidate for use in FE colleges, where many learners may feel threatened as they encounter new challenges and may have had negative experiences with education in the past.

³⁹ Cohen, G. L., & Sherman, D. K. (2014). The psychology of change: self-affirmation and social psychological intervention. *Annual Review of Psychology*, 65, 333–71.

⁴⁰ Cohen, G. L., Garcia, J., Apfel, N., & Master, A. (2006). Reducing the Racial Achievement Gap: A Social-Psychological Intervention. *Science*, 313(5791), 1307–1310.

⁴¹ Miyake, A., Kost-Smith, L. E., Finkelstein, N. D., Pollock, S. J., Cohen, G. L., & Ito, T. A. (2010). Reducing the gender achievement gap in college science: A classroom study of values affirmation. *Science*, 330(July), 1234–1237.

⁴² Walton, G. M., Logel, C., Peach, J. M., Spencer, S. J., & Zanna, M. P. (2015). Two brief interventions to mitigate a “chilly climate” transform women’s experience, relationships, and achievement in engineering. *Journal of Educational Psychology*, 107(2), 468–485.



4.4. In Practice: a short online writing exercise can lift achievement

We collaborated with Professor Geoffrey Cohen and his team at Stanford University to develop an online reflective writing exercise. The exercise prompted learners to reflect on their personal values – the aspects of their lives that make them feel happy or give meaning to their situation. Learners then wrote about times when these values were very important to them. This exercise helps learners to reflect on who they are as individuals and to build their sense of self-integrity.

Learners completed the exercise up to four times throughout the academic year in their regular English or maths classes.⁴³ In total, 4,381 learners across 13 FE colleges on GCSE or Functional Skills courses were involved. Table 5 gives an example of the modules.

⁴³ We did not enforce participation: if learners did not wish to do the exercise, or were absent for that class, then they would have received a lower level of the treatment (for example, having done three of the four modules).

Table 5: Structure of the values affirmation modules

Stage	Description	Objective
Selecting values	Learners are given a brief explanation of what values are (they are “something that gives some meaning to your life, or that makes you feel better or happy”). Then, learners are presented with a list of values. They are asked to select 2–3 values that are most important to them and give their life meaning.	Learners can select values that matter to them. Choosing just 2–3 values allows the learners to focus on what is genuinely most important to them in their lives.
Reflection and reflective writing	Learners are asked to consider the values they have selected and “think about times when these values were very important to you”. They then write a few sentences about why the values matter to them.	This reflection and reflective writing allows learners to connect with why these values matter to them, to think of concrete instances that demonstrate when and how their values mattered to them.

Learners wrote short paragraphs about the values they chose, for 10–15 minutes. For example, a learner who chose ‘relationships with friends or family’ as his values wrote the following:

Relationships with friends or family: I picked family as this was the most obvious choice and stood out the most, my family are the most important people in my life along with friends. They have always been there for me through good and bad and are always there to talk when I need them as I am for them if they ever need to talk about anything. I like to think I treat people as they treat me.

We found a positive impact of the exercise on Functional Skills attendance for the first 3 months of the year, but this effect ceased to be statistically significant when including full-year attendance data (see Figure 8). The exercise did not improve attendance for GCSE learners. Looking at overall achievement, we found that the VA intervention improved achievement in classes by 25 percent or 4.2 percentage points, a statistically significant improvement (see Figure 9).

The results in detail

Figure 8: Mid-year and Full Academic Year (36 weeks) – Average maths and English class attendance

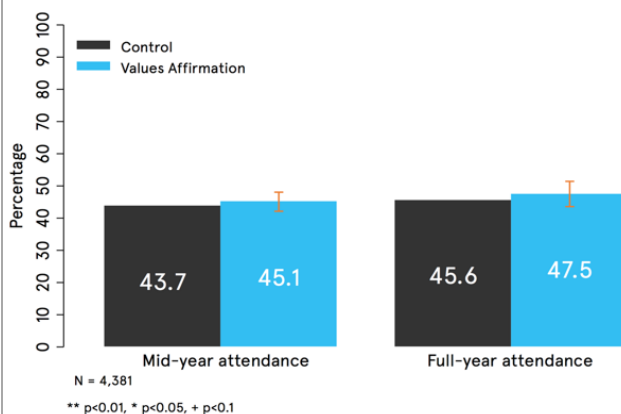
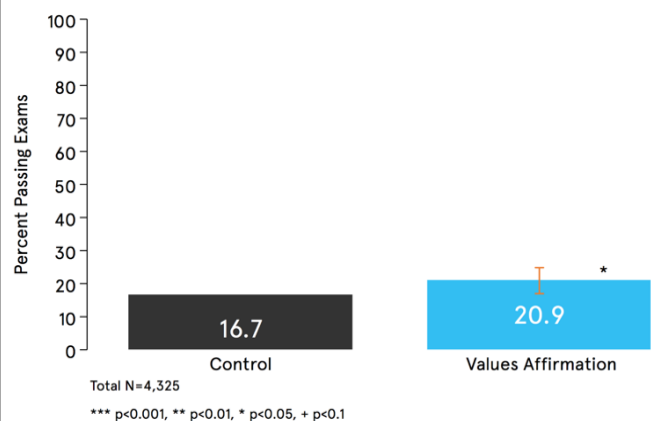


Figure 9: Full Academic Year (36 weeks) – % of Students who Passed All Their Exams



This finding suggests that, for some learners, a feeling of threat in the classroom is a barrier that directly impacts their achievement. Encouraging learners to reflect on what is important to them appears to alleviate this threat and leads to improved attainment. The finding has broader implications in terms of how learners relate to their courses and learning environment. Beyond the value of light-touch interventions, this trial also supports the case for more work to understand how learning environments can be made more inclusive and supportive for all.

4.5. Create a positive dialogue between learners and their learning environment

The essence of the text messages to improve attendance and success trial text messages (see section 2) was to provide regular encouragement for learners from their college. For example, each of the text messages aimed to help the learner believe at least one of the following:

- ◆ My learning is important;
- ◆ I can ultimately succeed;
- ◆ The more I practice, the more I learn;
- ◆ This course is for people like me; and,
- ◆ I am aware of what is required of me in the near future.

In a similar vein, the research outlined in this section highlights the importance of positive dialogue between learners and their learning environment. The VA exercise helps set the right ‘tone’ for engagement by helping individuals situate learning within their broader lives and selves. This positive experience is vital to support immediate outcomes but also a long-term relationship with education so that learners are more likely to engage with training and development opportunities in the long-term.

4.6. How to foster positive learner interactions

Below we outline some principles and thought-starters for ways that the insights outlined in this section can be applied to practice.

- ◆ Consider carefully the experience of the first class. Small things can set the tone of the course in a way that can be difficult to reverse.
- ◆ Help learners identify their own reasons for being in the classroom, and how this links with their values and motivations, and the things they’d like to achieve in the future.
 - Doing this in a structured way (e.g. through the VA or ‘purpose for learning’ exercises) makes it more likely that the reasons learners give themselves for being in class will be positive and intrinsic. A less structured approach, such as a class discussion, may risk the development of negative social norms depending on who speaks.
 - It can also be effective to focus on a topic learners are passionate about first, and then tie this discussion to their learning and motivation. If a learner is passionate about climate and sustainability, ask them what skills they’d need to make a positive contribution to the issue.
- ◆ If you are planning to run an exercise like those outlined in this section, here is some advice for ensuring it is successful:
 - Ensure learners do not feel rushed when doing the exercise. Set aside some dedicated time (about 20 minutes) in which learners can do the exercise.
 - Reassure learners that what matters during this exercise is their own thoughts and feelings. They don’t need to worry about grammar, spelling or anything like that.
 - Let learners know that they can keep their answers private. The exercise is most likely to be effective if the person doing it is able to reflect on the values that they genuinely consider most important, and not having to share their answers means people will feel safe to choose what really matters to them.

- Try to maintain a calm and quiet atmosphere in the classroom while learners are doing the exercises.
- ◆ Share others' positive stories about learning. The stories need to be authentic—and ideally in the learner's own words—but they have the potential to convey the important social norm that 'others like you' care about gaining knowledge and skills.
- ◆ Negative or remedial messages, such as those about missing class or assignments, should be clearly separated from the positive discussion; e.g. sent from a different account or through a different system (such as email vs. SMS), or handled by a different person (for example, the course administrator handling absence, while the class tutor engages in supportive discussion).

5. Principle 4: Develop skills beyond English and maths

Key points

- ◆ Some FE learners may lack the tools to set and persist with personal goals. Moreover, past failures in educational settings may have stifled learners' belief that they can succeed.
- ◆ It is possible to teach learners how to be 'gritty' by giving them a working framework that they can apply, not only at college, but in their lives more generally.
- ◆ The grit intervention was developed to provide learners with a framework called 'Deliberate Practice' for setting and following through with their goals. The intervention also contained motivational elements to help learners understand that success depends not only on talent but on effort too.

5.1. What do we mean by 'essential life skills'?

Essential life skills, sometimes referred to 'non-cognitive skills', 'soft skills' or 'character skills', interact with intelligence (or cognitive ability) in ways that allow learning to occur.⁴⁴ Such skills have been shown to impact many important long run life outcomes such as academic achievement, employment and health,^{45 46} even more than IQ according to some studies.⁴⁷ There is no single dominant

Essential life skills include skills like self-discipline, emotional intelligence and creativity. They are the skills that interact with intelligence (cognitive ability) in ways that permit learning to occur.

Grit is an essential life skill that relates to people's passion and

⁴⁴ Farrington, C. A., Roderick, M., Allensworth, E., Nagaoka, J., Keyes, T. S., Johnson, D. W., & Beechum, N. O. (2012). Teaching Adolescents to Become Learners: The Role of Noncognitive Factors in Shaping School Performance--A Critical Literature Review. Consortium on Chicago School Research. 1313 East 60th Street, Chicago, IL 60637.

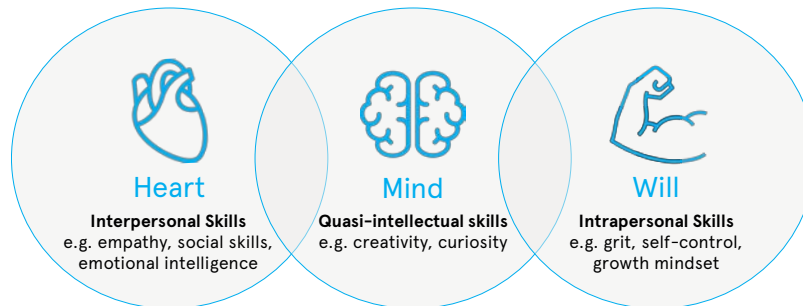
⁴⁵ Heckman, J. J., Stixrud, J., & Urzua, S. (2006). The effects of cognitive and noncognitive abilities on labor market outcomes and social behavior. *Journal of Labor economics*, 24(3), 411-482.

⁴⁶ Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H., ... & Sears, M. R. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Sciences*, 108(7), 2693-2698.

⁴⁷ Kautz, T., Heckman, J. J., Diris, R., Ter Weel, B., & Borghans, L. (2014). Fostering and measuring skills: Improving cognitive and non-cognitive skills to promote lifetime success (No. w20749). National Bureau of Economic Research.

framework of essential life skills (or even agreement on the term), but one emerging model categorises these skills in terms of their intrapersonal, interpersonal and quasi-intellectual properties (see Figure 10).⁴⁸

Figure 10: A typology of non-cognitive skills



For many people, essential life skills develop naturally at home through interactions with parents and siblings. School is also a great place to foster essential life skills as children learn with peers and receive instruction from teachers. Some young people, however, due to family circumstance or negative schooling experiences, may not have the opportunity to develop essential life skills to their fullest capacity, becoming adults who may find it difficult to finish school or hold down a job.⁴⁹

While the trajectory of our cognitive development crystallizes by the age of ten (or even younger, according to many studies),⁵⁰ the trajectory of non-cognitive development remains malleable well into early adulthood. This means that improving essential life skills could be an effective strategy for improving academic attainment as well as other long run life outcomes.

⁴⁸ Park, D., Tsukayama, E., Goodwin, G. P., Patrick, S., & Duckworth, A. L. (2017). A tripartite taxonomy of character: Evidence for intrapersonal, interpersonal, and intellectual competencies in children. *Contemporary Educational Psychology*, 48, 16–27.

⁴⁹ Carneiro, P., Crawford, C., & Goodman, A. (2007). The impact of early cognitive and non-cognitive skills on later outcomes.

⁵⁰ Almlund, M., Duckworth, A., Heckman, J., & Kautz, T. (2011). Personality psychology and economics. Discussion paper series No. 5500. (see p177)

5.2. 'Grit': passion and perseverance for long term goals

Grit, considered an essential life skill, is defined as one's 'passion and perseverance for long term goals'.⁵¹ Passion in this sense means sustaining interest in a particular field for long periods of time, whereas perseverance involves having the tenacity, diligence and resilience to carry on through times of frustration, disappointment and ambiguity. Grit has shown to be correlated with one's likelihood of persisting in various settings. For example, one study found that 'grittier' adult learners (over 25 year olds) record higher levels of educational attainment than their less gritty counterparts.⁵²

Grit as a concept is closely aligned with growth mindset theory, which finds that how we interpret struggles determines how we respond to them.⁵³ If we experience a setback and see it as a sign that we should give up, this might suggest that we have a 'fixed mindset' (believing that our talents are fixed and cannot be changed). The grit intervention we ran in FE colleges is not a traditional mindset intervention, as it does not only aim to change learners' mindsets, but also provide them with a practical model for setting and achieving goals called 'Deep Practice'.

During our preparatory interviews in 2014-15, a third of the learners we interviewed showed signs of having a fixed mindset, vocalised through their fear of failing and beliefs that they couldn't succeed. It was evident that previous failures in traditional academic settings had discouraged learners in their studies and led many to believe they did not have what it takes to thrive academically.

Moreover, some learners appeared to lack the skills to turn their academic goals into reality – they didn't know how to focus or where to seek help when they needed it. It was for this reason that we chose to concentrate on testing whether we could equip learners with a working framework to set and achieve personal goals and importantly, teach them that mistakes and failures are all part and parcel of learning.

⁵¹ Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: perseverance and passion for long-term goals. *Journal of personality and social psychology*, 92(6), 1087.

⁵² Duckworth, A. L., Weir, D., Tsukayama, E., & Kwok, D. (2012). Who does well in life? Conscientious adults excel in both objective and subjective success. *Frontiers in psychology*, 3.

⁵³ Dweck, C. S., Chiu, C. Y., & Hong, Y. Y. (1995). Implicit theories: Elaboration and extension of the model. *Psychological inquiry*, 6(4), 322-333.

5.3. In practice: boosting learners' 'Grit' through online modules

We developed the Grit intervention in collaboration with Professor Angela Duckworth and her team at the University of Pennsylvania. The intervention was delivered online and required no staff training. Below in Table 6 is an example module from the Grit intervention.

Table 6: Example module from the Grit intervention

Stage	Module content
Setting specific goals	Setting a stretch goal means thinking about something you would like to be better at in the future, and then putting a plan in place to help you get there. The more specific you make your goals, the better. For example, when a great singer practices, they don't just say 'I'm going to be brilliant at this song'. They pinpoint which parts of the song they need to work on and say, 'I'll practice this one part until I've mastered it'.
Why set specific goals	Setting specific goals allows you to measure your performance. If your goals are specific, you can see whether or not you achieved them. For example, if you say, "I want to go up a grade in my next English test", then you can see if you achieved this by looking at your test results. But if you say, "I want to be a great writer", you cannot tell if you achieved this goal because everyone has a different opinion on what makes a great writer.
Goal task	Now it's your turn. Write down one of your stretch goals make a plan for how you will achieve it. Be sure to specify (1) what you will practice, (2) where you will practice, (3) when you will practice and (4) for how long you will practice.

In the interim analysis, we found a statistically significant increase in attendance among those who had undertaken the grit modules. This effect remains similar in direction and magnitude in the full-year attendance analyses, but goes out of statistical significance (see Figure 11). This is due to a combination of the effect becoming weaker over time and an increase in statistical variance.

The results in detail

Figure 11: Mid-year (12 weeks) and Full Academic Year (36 weeks) – Average maths and English class attendance

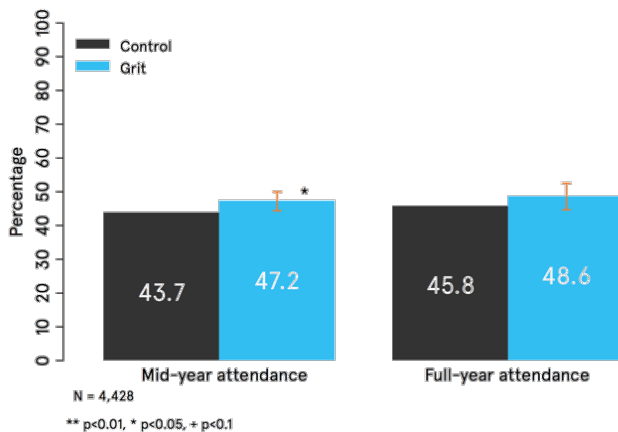
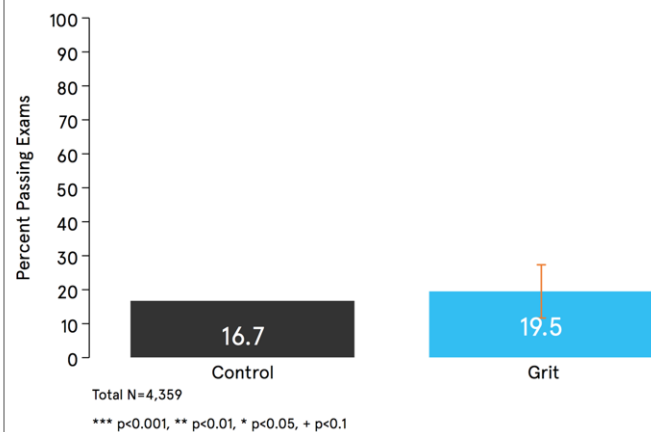


Figure 12: Full Academic Year (36 weeks) – % of Students who Passed All Their Exams



It may be that the modules simply didn't change learners' underlying grittiness, or that they would have been better delivered by the teacher rather than online. During our qualitative work with learners after the intervention, many said that they had enjoyed the grit modules, but felt that four sessions was too much. Repetition of the modules may have caused frustration amongst learners which in turn, influenced the extent to which they engaged with the exercises.

Researchers are still working on ways to improve grit and so the intervention tested in this trial was one of the first of its kind to be tested in the UK. The evidence on how to improve grit is still evolving and the current trial will greatly add to the literature in this area.

5.4. How to help learners build their essential life skills

The pattern emerging from existing research is that there is a group of personal characteristics that are as important as intelligence for educational success. The most consistently demonstrated of these are the cluster of characteristics around conscientiousness, persistence, and self-control – including grit.

Although there is cause to believe that these characteristics matter for success in education and employment, the evidence on how to increase them is less clear. Some studies have shown that it is possible to increase a young person's grittiness, for example, and that this reads through to

attendance and achievement. Other studies have shown either no effect, or attenuation over time – as we found ourselves in the research outlined above.

However, it is important to continue this research, on which essential life skills matter, and how they can be effectively fostered. For those wishing to explore ways that their learners can develop these skills alongside their learning, we suggest the following:

- ◆ Consider evaluation strategies from the beginning; know that these approaches have potential but their effectiveness is not cut and dried. How are you going to test whether what you're doing is working for your learners?⁵⁴
- ◆ Look at the evidence backing up your proposed intervention – has it been robustly tested in different contexts? Has it changed objective outcome measures like attendance or grades?
- ◆ If you are considering commissioning or collaborating with an outside organisation to develop materials for you, look at the quality of their evaluation: do they have good evidence of impact, beyond testimonials from learners who enjoyed the modules?
- ◆ If you wish to develop your own materials, involve tutors and learners in design of the interventions, and gather information from them about how they responded to it.

⁵⁴ We, of course, would suggest you consider an RCT, but there are many other ways of evaluating, both through data that you already hold, and the voices of your learners.

6. How to implement behavioural insights in college classrooms

Key points

- ◆ This section is intended as a thought-starter for how practitioners in colleges, workplaces and community learning sites can apply the insights outlined in this report to support the retention and success of their own learners. You may see many things you are already doing, but hopefully others you might not have considered.
- ◆ It is divided up into phases, from before the learners arrive, to helping them prepare for assessment.
- ◆ These are suggested approaches based on the research findings, but it is always important to test new approaches in new contexts to ensure they are working the way you expect. Otherwise, the intervention could take up time that could be used for something more effective, or could even have unintended consequences.

6.1. Before learners arrive

- ◆ Make contact directly and personally as soon as possible after a learner has signed up for a course. The more personal the contact feels, the better – a slightly personalised text message from a course tutor, for example, is likely to be more effective than a form email from the Principal. Communications could be sent from:
 - A course tutor or someone else the learner will be interacting with regularly in their studies;
 - A current learner, who is able to provide the new learner with some information about what things will be like; or
 - A local employer or someone else who can credibly communicate the value of the course to the learner.
- ◆ Get started with the behaviourally-informed text message prompts to help them get in the right mindset and plan for the start of their course (section 2). This could include topics such as,
 - Prompting learners to plan how, when and in what way they will get to their place of learning;
 - Items they should remember to bring;

- Reminding learners that they belong to the organisation they are learning at, that they will be among friends and will be in a supportive environment; and
- Prompting learners to reflect on the goals they wish to achieve this academic year.



6.2. In the first week

- ◆ Ask learners to reflect on themselves and others in their class, either by:
 - Doing a values affirmation worksheet (see section 4).
 - Asking learners to discuss in pairs, three ways that they are similar to each other.
 - Helping them understand their mindset by exploring how they interpret setbacks.
- ◆ Build intrinsic motivation in the first week by asking learners to undertake a self-persuasion exercise. This could include:
 - Writing a testimonial to a future learner about the importance of learning in helping people achieve their aspirations (see section 4 for tips).
 - Asking learners to deliver a persuasive talk on the importance of English and/or maths in everyday life.

Ask learners to write about what they are going to do after the course, collect the information and return it to them later in the year at a more challenging point in the class.

- ◆ Ask learners to provide details of people they'd like to be involved in supporting their learning:
 - Encourage them to make a plan for when and how they're going to involve these supporters; or,
 - Seek their consent to your contacting their supporters with information about course content, upcoming deadlines and other important milestones in their learning (see section 3). Remember that these messages should be positive and not include things like reporting on attendance!

6.3. During term time

- ◆ Encourage learners to set specific goals for themselves and define the what, when and how of the actions that will lead to them achieving this goal. For example, if a learner says they want to achieve at least a B in their next class test, you could prompt them to reflect on what this means on a daily basis – what will they study (past exam papers, homework exercises?), where will they study (in the college library, at home?) and how will they study it (e.g. will they use online resources or text books?).
- ◆ Let learners know the college is here to support them by sending them encouraging text messages on a weekly or fortnightly basis. Refer to sections 2 and 4.

6.4. Before and during breaks

- ◆ Encourage learners to have a plan in mind for what they're going to do when they return from the break; this could be as simple as having a plan for how they're going to get there.
- ◆ Keep up supportive communications via text messages so that the learner doesn't become disconnected from the college while they're away from it.
- ◆ Contact study supporters asking them to prompt the learner to make a commitment to them around revising during the break and that they will return to college after it.

6.5. Before exams

- ◆ Communications should be focused on addressing possible sources of stress that might take away mental energy that could be used for the exam. For example, you could send learners a quick email or text message:
 - Acknowledging their hard work and persistence so far;

- Prompting them to think about why they are doing the course and what they hope to achieve; or
- Reminding them to locate the things they'll need and plan their route to college the night before.

6.6. The importance of testing

This report outlines a number of areas where we've found that low-cost tweaks to the context around learning can improve engagement and achievement. The approaches put forward in this guide are suggestions building on the findings of the research. We emphasise that the body of research in this area is in its early stages and there is no one-size-fits-all approach. It therefore remains important to test and evaluate new approaches, even those suggested in this guide. Think about how you're going to know whether the changes you made had an effect. Planning in advance how to evaluate an initiative will allow you to use more robust methods. This report hopefully demonstrates there is immense value in testing and refining approaches to helping learners persist and achieve in the pursuit of valuable skills like English and maths.