



MENTAL TOUGHNESS REPORT

January 2015

Abstract

Abstract: A team of 11 Staff, 9 teachers and 2 learning mentors, were trained in the Mental Toughness techniques advocated as effective in developing various aspects of the 4Cs of Mental Toughness proposed by Professor Peter Clough. The team developed a course of 6 lessons which were subsequently delivered to the Y11 cohort. Prior to delivery of the lessons 210 students and staff had their Mental Toughness measured by the MTQ48 assessment tool. Immediately following the delivery of the programme re-tests of the MTQ48 were taken by the MT tutors and a random sample of 70 students. The study was not controlled. The 4Cs model was not being tested – this has been researched elsewhere and the MTQ48 is a recognised reliable and valid tool for measuring the four components of control, confidence, commitment and challenge. Results were positive in that the students' confidence scores and emotional control scores were significantly higher. A statistically significant improvement in overall MT of staff was also evident over this period as measured by the MTQ48. The greatest increase for staff was confidence. Results suggest that further work be done to develop tools to develop commitment scores of students.

January 2015

Introduction: Steve Oakes is the Assistant Director of 6th Form at The Blue Coat School and lead for the mental toughness programme at KS4. He is a licenced trainer of Mental Toughness. Before training to become a teacher Steve spent six years in the British Forces. He completed the Royal Marines Commando Course, the Parachute Regiment Selection and Training and served in many countries throughout the world including Iraq, for which he was awarded the General Service Medal.

The aim of the programme was to help students achieve:

- A happier and more balanced approach to school work and life in general
- Improved confidence and well-being
- Improved performance in exam results and attainment levels

Background context

Blue Coat is an outstanding 11-18 C of E Academy and Teaching School in Oldham with approximately 1500 students including 400 in the Sixth Form. The Sixth Form team in particular have promoted Growth Mindset and the A level Mindset over the past three years. This is the idea that abilities in an area are not fixed and through practice they can be improved. Hence the interest in developing a scheme of work to build on the foundations already laid in this area and to develop lessons which gave students the tools to apply a growth mindset to themselves.

The Children's Society published a report in 2013 stating that wellbeing of KS4 aged students had fallen in recent years and that students of this age were experiencing a loss of control in their lives. Lord Layard's 2012 report into how better mental health could improve our social and economic life has promoted the role of education in psychological therapies delivered in the NHS to reduce the number of working days lost. The need for an improved wellbeing curriculum which addressed the issues was clear. There was significant research to recommend that Mental Toughness could be taught because it is a life skill as opposed to a trait. In addition higher MT scores have been correlated with better outcomes in a host of measures including wellbeing, transition to college and attainment generally.

Methods

1. Nine teachers and two Learning Mentors were invited to be part of the Mental Toughness Pilot.
2. All of these staff had their MT measured by completing the MTQ48 and underwent two full days of training accompanied by Pauline Bell from Sticky Change; before taking a day to plan a course of 6 lessons to teach the 4Cs Model of Mental toughness and activities designed to improve their MT.
3. The whole of Y11 had the philosophy of the MT course explained to them in a Year Assembly. At a later date Peter and AQR team came in and delivered an assembly prior to the whole year

group having their MT measured by the MTQ48 Young Person's version. None of the year group ever had their individual scores revealed to them for ethical reasons.

4. The Mental Toughness lessons were delivered for one hour once per fortnight. Prior to each lesson there was a Year assembly which reported the Years "results" from the questionnaire and explained the focus of the lesson and or motivational content. E.g. The story of Roger Banister and the 4 minute mile. Sarah Outen the British woman aiming to circumnavigate the globe by human power visited the school prior to the Confidence lesson and related her experiences to the model.
5. After an initial introduction lesson, the lesson order covered Confidence, Control, Challenge and Commitment before concluding with a Final lesson where students produced a summary of their main learning points from the lessons.

Lesson 1. The initial lesson introduced the 4Cs Model, explained the Yerkes-Dodson inverted U performance – pressure curve and students completed a picture frame challenge in groups before relating their thoughts and feelings back to the model.

Lesson 2 on Confidence started with a simple "Bin Challenge" –students threw rolled up paper balls into a bin. They then used a visualising technique and a positive thinking ladder to improve their success rate at the same challenge.

Lesson 3 Control. Students completed a Number Grid focussing activity whilst music was playing, after a breathing exercise and without music playing they did a similar exercise and noticed a large improvement. The circles of influence and control (Stephen Covey) was explained and the think feel act cycle. Students then coached a partner through a problem using the think feel act cycle.

Lesson 4 Challenge. After exploring the different types of challenge students used a 2 -4 -8 planning proforma to plan their own revision for their GCSEs. And students experience a guided imagery script to help them focus in exams.

Lesson 5 Commitment. Using a values questionnaire completed earlier students analysed the types of activity the do stick at and then used a force field analysis tool and positive self-talk to align the completion of a task with their values. Thereby making it more likely that they will stick at the activity in question. Students finished with making a list of three things I will do tomorrow.

Lesson 6. In this summary lesson students split into groups and were given 15 minutes to prepare a presentation to the rest of the group. E.g. one group was asked to prepare a presentation explaining each of the 4Cs might apply to different life events such as becoming a parent for the first time or being made redundant.

6. A training session was used to explain some of the activities that Y11 were doing to Form tutors and in particular a values questionnaire which was then given to students during two of their afternoon form times. The results of the completed values questionnaires were passed to the MT tutors for use in a MT Lesson.
7. After the course was completed 3 forms were randomly selected for retest on the MTQ48 Young Person's version. The sample was obtained by randomly selecting 3 forms of students to obtain

70 students. (B, BH and W were selected using <https://www.random.org/> on 7.04.14 after assigning B-1, H-2, BH-3, L-4, M-5, LM-6, R-7, W-8 and RW-9). Forms were selected for logistical ease of re-testing at this very busy time for students.

8. In the week or so following each lesson one student from each form was randomly selected by a member of staff working under the guidance of the school's R&D leader to collect and collate the students' evaluation of the lessons.
9. The pilot was evaluated.

Results Staff

Nine teachers and two Learning Mentors were invited to be part of the Mental Toughness Pilot.

All of staff had their MT measured by completing the MTQ48 and underwent two full days of training by AQR accompanied by Pauline Bell from Sticky Change; before taking a day to plan a course of 6 lessons to teach the 4Cs Model of Mental toughness and activities designed to improve their MT.

One of the biggest impacts has been on the staff who were selected for training and delivery of the well-being lessons.

Highlights

- A upwards trend in all aspects of mental toughness
- A significant increase in confidence is the largest effect

Sample

Eleven members of staff completed the MTQ48 pre and post the mental toughness development intervention programme. This sample included 3 males and 8 females.

Descriptive Statistics

Data was screened for outliers, missing data, and normality, for which there were no issues (skewness < 2, kurtosis < 2). Descriptive statistics are presented in Table 1. Examination of the minimum and maximum values indicated a range of scores for all components of mental toughness, though there were fewer low scores in the post-test sample.

	Min	Max	Me an	SD	Ske wne ss	Kurt osis
<i>Pre-test</i>						
Mental Toughness	2.00	8.00	5.82	1.83	-.98	.16
Challenge	1.00	8.00	4.64	2.25	-.28	-1.00
Commitment	4.00	10.00	6.36	1.75	.55	.72
Control	2.00	9.00	6.27	2.05	-.87	.36
Life	3.00	10.00	6.91	2.12	-.32	-.59
Emotion	2.00	8.00	5.09	2.07	-.07	-.76
Confidence	2.00	8.00	5.36	2.16	-.43	-1.00

Abilities	2.00	8.00	5.18	1.78	-.33	-.41
Interpersonal	1.00	9.00	4.91	2.47	.13	-.65
<i>Post-Test</i>						
Mental Toughness	5.00	10.00	7.18	1.66	.29	-.94
Challenge	3.00	9.00	5.64	2.01	.52	-1.22
Commitment	4.00	10.00	7.18	1.72	-.34	.06
Control	4.00	10.00	6.91	2.26	.20	-1.48
Life	5.00	10.00	7.73	1.62	.02	-.85
Emotion	3.00	9.00	5.45	2.42	.48	-1.58
Confidence	4.00	10.00	6.82	1.83	-.03	-.83
Abilities	4.00	9.00	7.00	1.90	-.54	-1.11
Interpersonal	3.00	9.00	5.64	1.63	.55	.81

Mental Toughness Development

A paired samples test was conducted to examine changes in mental toughness between time one and time two. The results are illustrated in Figure 1.

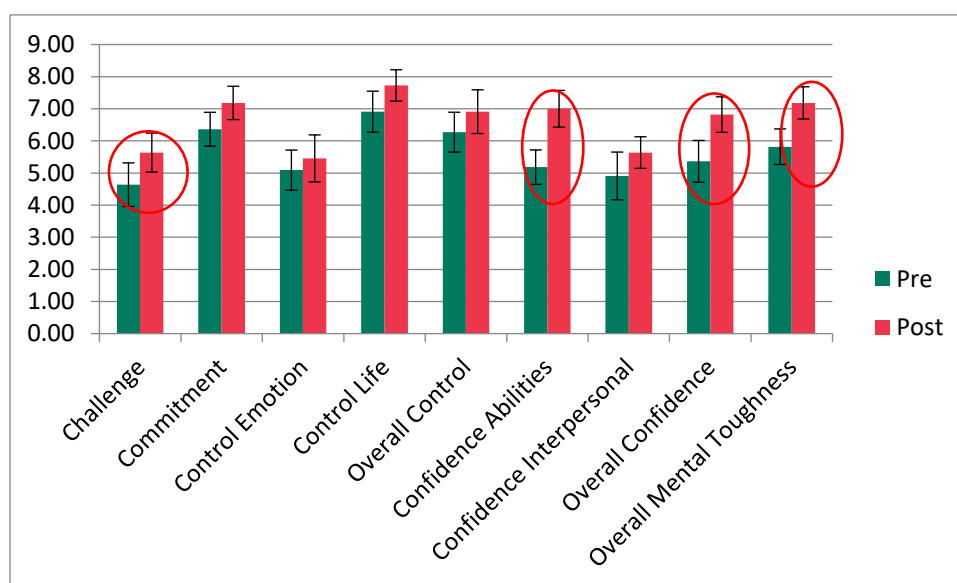


Fig 1. Pre- and post-test mental toughness scores

There was a clear trend in all aspect of mental toughness towards an increase. With a small sample size, statistically significant values require very large effect sizes. However, significant increases were still evident for several variables. **Challenge** progressed from a mean score of 4.64 ($SD = 2.25$) to 5.64 ($SD = 2.01$) ($t(10) = -2.47, p < .05$). **Confidence in abilities** increased from a mean score of 5.18 ($SD = 1.78$) to 7.00 ($SD = 1.90$) ($t(10) = -8.03, p < .01$). **Overall confidence** increased from a mean score of 5.36 ($SD = 2.16$) to 6.82 ($SD = 1.83$) ($t(10) = -5.88, p < .01$) and **overall mental toughness** rose from 5.82 ($SD = 1.83$) to 7.18 ($SD = 1.66$) ($t(10) = -3.32, p < .01$).

Results Students

Highlights

- Significant improvements in control and confidence
- 27.6% of grade variance predicted by baseline mental toughness measurement

Sample

Of the initial sample of 223, a total of 69 students completed the MTQ48 pre and post the mental toughness development intervention programme. This sample included 31 males and 38 females aged 15-16 ($M = 15.25$, $SD = .43$). Attendance at the mental toughness development sessions for all participants used in the analysis was 100%.

Descriptive Statistics

Data was screened for outliers, missing data, and normality, for which there were no issues (skewness < 2 , kurtosis < 2). Descriptive statistics are presented in Table 1. Examination of the minimum and maximum values indicated a range of scores for all components of mental toughness.

Table 1. Descriptive statistics for pre- and post-test mental toughness scores

	Min	Max	Me an	SD	Ske wne ss	Kurt osis
<i>Pre-test</i>						
Mental Toughness	1.00	10.00	3.52	1.90	.70	.89
Challenge	1.00	9.00	3.75	2.10	.51	-.58
Commitment	1.00	10.00	3.72	2.29	.74	.21
Control	1.00	9.00	3.62	1.66	.92	1.27
Life	1.00	8.00	3.62	1.75	.35	-.43
Emotion	1.00	9.00	3.90	1.86	.73	.22
Confidence	1.00	10.00	3.91	2.01	.43	.05
Abilities	1.00	10.00	3.68	1.88	.79	.86
Interpersonal	1.00	10.00	4.20	2.28	.50	-.16
<i>Post-Test</i>						
Mental Toughness	1.00	10.00	3.84	2.38	.68	.09
Challenge	1.00	10.00	3.81	2.38	.64	-.46
Commitment	1.00	10.00	3.59	2.44	.85	.01
Control	1.00	10.00	4.03	2.27	1.08	.88
Life	1.00	10.00	3.88	2.20	1.01	.83
Emotion	1.00	10.00	4.46	2.36	.58	-.55

Confidence	1.00	10.00	4.42	2.57	.47	-.75
Abilities	1.00	10.00	4.46	2.52	.58	-.34
Interpersonal	1.00	10.00	4.48	2.47	.60	-.52

Mental Toughness Development

A paired samples test was conducted to examine changes in mental toughness between time one and time two. The results are illustrated in Figure 1.

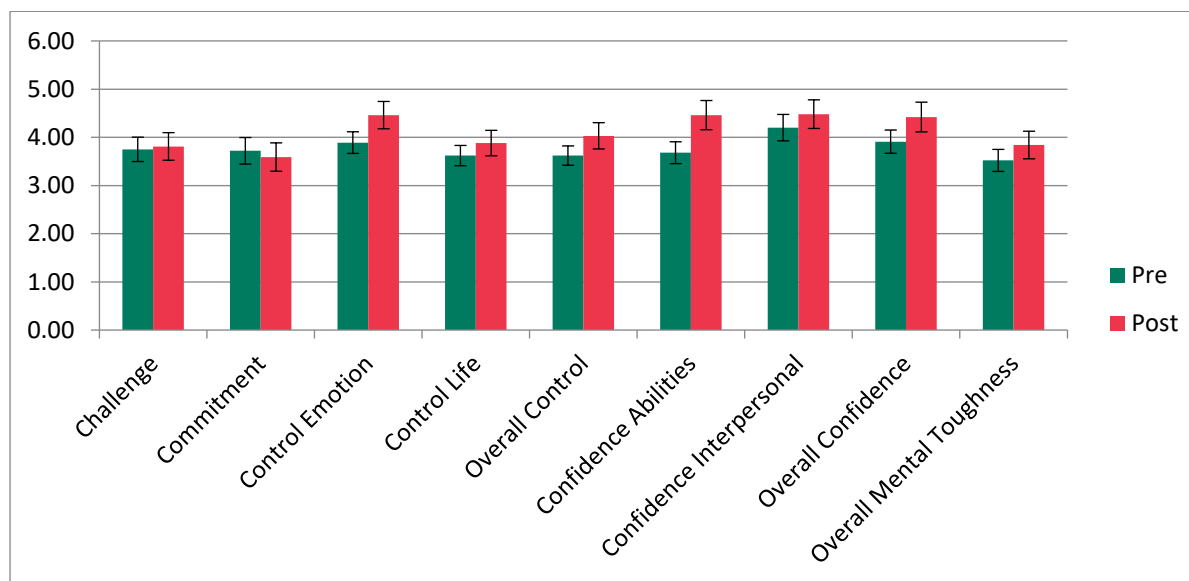


Figure 1. Pre- and post-test mental toughness scores

Significant improvements were evident for emotional control, which progressed from a mean score of 3.90 ($SD = 1.86$) to 4.46 ($SD = 2.36$) ($t(68) = -2.57, p < .05$). Significant differences were also observed for confidence in abilities, which progressed from a mean score of 3.68 ($SD = 1.88$) to 4.46 ($SD = 2.51$) ($t(68) = -2.93, p < .01$) and overall confidence, which progressed from a mean score of 3.91 ($SD = 2.01$) to 4.42 ($SD = 2.57$) ($t(68) = -1.97, p < .05$). Overall, clear improvements were evident in the confidence and control elements of mental toughness.

Impact on grades

Five different grade boundaries were identified prior to the analyses. These were A*/A, A/B, B/C, C/D, and E. In total, the sample contained 28 (40.60%) A*/A, 0 (0.00%) A/B, 29 (42.00%) B/C, 6 (8.70%) C/D, and 5 (7.20%) E. One participant did not have a grade specified. Correlational analysis demonstrated positive correlations between mental toughness scores and grade ($r = .28, p < .05$). The strongest relationships between components of mental toughness and grade were commitment ($r = .33, p < .01$) and life control ($r = .31, p < .01$).

Correlational analysis can only identify an association between variables but has no predictive capabilities. As such a linear regression analysis was performed to examine the extent to which baseline mental toughness scores predicted grade. In total, 27.6% of the variance in grades were explained by baseline mental toughness measurement.

Qualitative Data

As well as the statistical data Blue Coat School also collected qualitative data. This was done through a series of questions for staff – four questions related to their students and five questions related to them (About You).

About Students:

How engaged were the students in the MT lessons?

Found students were fully engaged at the beginning of the course but this did dip towards the last few lessons. This may have something to do with certain students in the class who are quite difficult to motivate in general.

I was lucky with my group – most of them were engaged, with the exception of 2 or three. That said, these two/three students did engage in the activities. I was impressed with some of the discussions we had and they approached this maturely.

Differed quite a lot dependent on the individual, would say about 65-70% engaged the majority of the time.

In our group students were relatively well engaged.

I believe that the students were engaged during all of the sessions. Very few tasks, if any, seemed to disengage the students. Only one student in the class appeared to have no interest in any aspect of the course. This remained consistent throughout the six week delivery.

They engaged well with some of the activities, especially activities such as 2,4,8 and the forcefield analysis where they felt they could get tips for organising and prioritising their revision. I found them less engaged with techniques such as breathing and power posing as they found it less obvious how it could help them with their exams. They needed more guidance with this and help to let go of their inhibitions.

What did the students comment on that they liked best about this training?

They enjoyed the activities and also they preferred it to Wellbeing.

They liked the activities, especially the relaxation and the visualisation.

The practical ideas that helped them particularly with revision, eg the 2,4 8 technique, the strategies that they could relate to most easily due to their exams being imminent.

A couple of students commented on how the focus / visualisation techniques helped them in the bin challenge (those whose score went up) and how they could possibly use it in other situations. Students also commented on the positive effect of the breathing exercise and PMR. Some students liked the values questionnaire and tried linking their core values to targets / activities they find particularly hard to stick at, others were struggling to make that link.

They seemed to particularly enjoy the challenge lesson and doing group tasks. This was more so than doing individual techniques such as the breathing and visualisation exercises. They did not comment on this but this is what I picked up while delivering each lesson/aspect.

I think the biggest comment came about from the investment – especially the idea that this was something new and they were trialling it. I also think they liked the idea of someone new (initially) taking the sessions – someone they didn't know.

The students seemed to like strategies that could directly link to helping them revise or prepare for the exams. Techniques for dealing with exam stress/anxiety seemed particularly popular. One student commented that they felt the calmest they have ever felt after the relaxation training.

My group said that they had enjoyed the fact that it had been active and that it gave them some ideas for coping with stress. They liked the stroop test and the puzzle and some of the video clips and stories we discussed.

What techniques from the MT sessions have students been using (please give examples and state how you know this)?

In the final lesson when they were asked to discuss how to use the various techniques it was apparent that they had engaged with a number of the techniques and could apply them to scenarios e.g. students talked about stressful situations and how breathing could help them. Also about 50% of the students were sticking to the 2,4,8 activity we had done in a lesson. This was evidenced when I asked students to show their revision in a follow up lesson.

Students have not come forward to say how they have been using the techniques sadly – though this may be more to do with the groups of students I teach for English. One student from my MT group did mention that they used the breathing technique.

2, 4, 8 they have said they use (more results from this in student survey)

One of the biggest ones I have noticed as a form tutor is the breathing one – even though this has been said in jest – this seems to be one that they have taken on board. In the sessions, this was also something that students really engaged in – surprisingly – maybe this was the novelty factor – but the idea of breathing exercises and “time out” was definitely something they seem to take on board.

I have had students comment that they have used the breathing exercises (reported after the lesson). Also some students made comments that they had thought about how to focus during a test.

I don't know. I did not get a lot of positive feedback about the techniques we showed them.

What positive differences have you noticed (if any) in student behaviour since the sessions ?

My year 11 English class have been a lot calmer in QMAs where normally they would get quite wound up and anxious.

Nothing noticeable

I have noticed a difference in attitude in two students, AW and GR, more positive generally.

The students' attitude remained positive throughout so it would be difficult to notice any changes in behaviour. I think that these will take place away from the class sessions

About Staff:

How has being involved in the delivery of the Mental Toughness Programme contributed to your CPD ?

The nature of the content of the lessons helped build my own mental toughness. The initial two day session was extremely insightful and enabled me to reflect on things I need to do differently. Delivering the material then pushed me out of my comfort zone and helped me develop confidence.

Also working with other staff that I have never had the opportunity to work with before was great. I learnt so much from how others teach/plan.

I've been able to use some of the activities and strategies with individual students in one to one sessions regarding motivation and confidence issues.

It has broadened my understanding of how to manage my emotions and stress, which in turn has helped me to be much calmer and less anxious about things that are not in my control. In terms of CPD, the techniques have been really helpful in the classroom and I have used relaxation and breathing activities in my KS3 music classes.

Finding out about the concept of MT and its components, learning new techniques & strategies for improving MT

I have gained invaluable knowledge / understanding of why certain students are so stressed and underachieve and how to help them deal with their stress / lack of confidence and commitment.

I now feel confident to deliver this area to students and other colleagues. It has enabled me to work with a variety of colleagues outside of my subject area and with a plethora of experience. It has been really useful to work collaboratively with a range of people whilst learning about something that was completely new to me.

It has given me a deeper understanding of how Y11 view themselves/school life/personal challenges. This I feel would support me as a teacher if I was teach Y11 in an examination lesson.

It has definitely challenged me! I have been taken out of my "comfort zone" and being observed only added to my pressure!!! I have enjoyed the challenge and I have enjoyed the opportunity of working with colleagues who I would never have got the opportunity to work with. This has definitely been beneficial.

It's been beneficial in my own outlook on certain things, especially when working with identified students.

I thoroughly enjoyed the MT training and found that the material covered could be included in my day-to-day practice as a teacher.

It has given me the opportunity to work with staff from across the school and from different departments. It has given me an opportunity to be involved in a whole school project and that has been very important to me.

What have you gained personally from being part of this programme?

Given my personal scores I am more reflective in terms of my own MT. I try out the techniques and use them with others.

I feel more in control with regards to work and find I'm much calmer when under pressing situations that I can't control.

I have got to know staff and interacted with people. I have been able to apply the strategies to my own lifestyle.

Greater understanding

It has given me a variety of strategies to help me cope with stress and lack of confidence etc., some of which I now use on a regular basis.

It has made me increasingly aware of my own mental toughness and how I personally deal with the four areas. It has made me more self-aware and supported me to overcome challenges that have arisen since the training

Lots. I have perhaps learned a lot about what my weaknesses and strengths are. I have learned some new techniques to cope with difficult situations (particularly breathing and visualisation) and it has given me the time to reflect on what makes me tick – the training allowed me this time and really got me thinking about what I could improve on.

Definitely a more balanced approach to school work

I've enjoyed working as part of a team to develop the programme. I think that every programme should have the opportunity to develop in such a way; the input from other staff is invaluable.

I have used some of the techniques we were taught personally in my life when dealing with stressful situations. I have particularly thought about the circles of control and the I have also used the breathing techniques with my daughter who doesn't sleep!

How has MT impacted on your teaching practice overall?

I have used a number of the strategies with other students I teach and use the theory to inform delivery of tutor sessions.

I've applied parts to one to one sessions

I have tried to use some of the techniques in KS3 classes before QMAs or music performance tasks.

More sensitive to students mental state, use one or two of the simpler/quicker techniques to motivate so students want to work harder in lessons for themselves

I have started asking students in my form (especially those underachieving) to reflect on their values to try and motivate them by linking those values to what's going on in school. I am going to share relaxation techniques with students in Years 10 & 12 to help them cope in stressful situations (speaking test). I feel that MT hasn't impacted much on my teaching practice as yet because it has been a hectic 3 months and everything is still very new to me, but I can see the benefits of teaching MFL students relaxation techniques, especially before the very stressful speaking exams, and will definitely start using them.

Using some of the basic concepts to underpin teaching lower down school e.g in fitness using the self-talk to try and improve motivation and self-belief within students.

Trying to get students to visualise how something should look-not to the extent of a script but using the basic principle of seeing success.

I don't think it has impacted specifically on teaching – but it certainly has on how I deal with difficult situations in and out of the classroom. I have learned how my behaviour can impact on others and how to curtail or mask this to improve situations.

I've tried to use all the strategies with my teaching practice. Having a Y11 class that has gone through the training makes it much more effective as they have already spent the time learning the strategies.

It has made me more aware of the pressures young people face across the range of subjects they have. It has also encouraged me to put short, snappy activities into my lessons to refocus them. I have also thought about how important it is to be active as that is what the Year 11s commented they liked best about the MT lessons.

What additional skills do you feel you have gained?

Teaching MT in itself is an additional skill. We all found it challenging as the concepts are quite high level and very specialised. However, I love learning new things and gaining experience in teaching something like this I believe has been invaluable. I would certainly be very interested in developing my skills in this area or volunteering myself for helping to deliver this to staff in school.

Not really skills but greater awareness of MT and how students who are mentally sensitive may need additional support in a different way.

Relaxation techniques

An increased level of prioritisation

An understanding of mental toughness and how it impacts on people in everyday life.

All the techniques that we did in the training. I could not lead any of those before whereas I am able to now.

Breathing! Learning to breathe and take a minute to assess situations before making decisions – not really a skill – but definitely something I do more of now

I don't think I've gained any additional skills but certainly feel I've developed some of the skills I had

I was already aware of the techniques used through my experience of teaching sports psychology.

I think being part of the programme has helped me both as a form tutor and as a subject teacher and has given me more confidence when coaching students.

What are you doing differently as a result?

Adapted sessions with students to help them with issues

From a personal perspective I am operating in a much calmer, more pragmatic way which I believe is making me more efficient and effective as a result.

Being more observant, maybe dealing with issues more tactfully at times if I feel it necessary/appropriate.

Calm myself down in or before stressful situations, suggest the use of these strategies to students with anxiety issues.

Using some of the basic concepts to underpin teaching e.g in fitness using the self-talk to try and improve motivation and self-belief within students.

Realising that if you cannot control something try not to let it increase my stress levels.

Reflecting on things before making quick decisions. I have learned that I can be quite quick to make decisions, whereas I certainly mull things over and am less emotional than before the MT training.

More positive generally.

I'm continuing to develop my own use of the MT skills into my daily life.

I often apply techniques in my personal life and it has given me a greater insight when dealing with young people.

Programme Summary

There has been considerable public debate concerning the impact of 'character development' within schools. We believe that we have developed an effective programme for our context and hopefully one that will be transferable.

This has been an amazing project to be part of. The head of Y11 commented that very early on he realised that sharing this training with Y11 gave him a **common language** to use with students who were facing difficulties, for example, Y11 students with eating disorders, panic attacks, anger issues, general anxiety and dealing with the aftermath of a parent being diagnosed with cancer.

One of my fellow MT Tutors informed me that he had used the breathing exercise to calm a girl down from a potential panic attack as she was going into one of her GCSE exams and had discussed the benefits of the programme at another girl's 6th Form interview.

On a lighter note, an IT technician who helped with the audio visuals for an assembly actually got his wife to watch the assembly video. Apparently she was studying at night school and he was, "Sick of hearing - I can't do it." It seemed to work. One of my colleagues used the "power pose" and breathing exercises to calm down before an interview. She said she had to tell her husband to, "Shut up and stop laughing – because this is working!" She got the job. She only knew of the exercises because her Y11 students had told her about them. The impact of the programme has gone beyond its target audience.

It has been superb to see the real and overwhelmingly, positive impact on the MT tutors and the desire from other staff to be involved in the possible development of this in school. It has been gratifying to see how objectively tested, psychometric measures of confidence and emotional control have been affected by the programme. **Using these lessons we can change the way people respond to the stressors around them.** If we can similarly develop tools to foster commitment, this programme will become a force for improving academic attainment; particularly if these tools and techniques are embedded into the culture of the school. We believe that the MTQ48 is a reliable and valid test for measuring aspects of 'character' and we hope to continue to develop the programme over the next year.