



RESULTS REPORT: CASTLE RUSHEN HIGH SCHOOL

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on behalf of AQR

Abstract

Results of a pilot study carried out at Castle Rushen High School to look at links between student's performance and mental toughness, and to examine the effectiveness of mental toughness interventions.

Summary of the Project

The current report details the results of a pilot study carried out at Castle Rushen High School. The objectives of this pilot were to look at links between student's performance and mental toughness, and to examine the effectiveness of mental toughness interventions. A group of 12 students completed a measure of mental toughness, and then completed up to 5 mental toughness training sessions focussing on anxiety control, attentional control, positive thinking, target setting, and developing the 4 C's. Students then completed the mental toughness assessment again. Tracking data was also provided by subject teachers to indicate whether the students were performing on, below, or above target in each of their subjects.

In the project mental toughness was assessed using the MTQ48. This assesses 6 components of mental toughness: Challenge, Commitment, Control of emotions, Control of life, Confidence in abilities, and interpersonal Confidence. Commitment is defined as the ability to carry out tasks successfully despite problems or obstacles and challenge refers to seeking out opportunities for self-development. Control of emotions is described as the ability to keep anxiety in check and not reveal emotions to others and control of life is a belief in being influential and not controlled by others. Confidence in abilities is a belief in individual qualities with little dependence on external validation, and interpersonal confidence refers to being assertive and not intimidated in social contexts. Overall control and confidence scores are also computed. Each of these components of mental toughness will be referred to separately in this results report.

Key findings

An examination of the results of the MTQ48 revealed that the mental toughness intervention was successful in improving some aspects of student's mental toughness. The mean scores of the group of students before and after the intervention are shown in Table 1. The asterisks indicate the components of mental toughness for which the improvement was statistically significant.

Table 1: Mental toughness before and after the intervention

	Time 1 (before intervention)	Time 2 (after intervention)	
Challenge	3.67	4.17	
Commitment	3.67	4.50	
Control	3.67	4.50	
Control of emotion	4.75	5.33	
Control of life	3.25	3.83	
Confidence	3.33	4.50	**
Confidence in abilities	3.08	4.42	**
Interpersonal confidence	4.17	4.75	
Total mental toughness	3.25	4.50	**

The intervention was therefore successful in significantly improving confidence, particularly confidence in abilities, and also total mental toughness. However, it is important to note the small sample size ($N=12$) used in the current pilot study. When using statistical analyses, the number of participants (and therefore the degrees of freedom in the data) are taken into account in the analyses. Therefore, it is fairly difficult to find significant improvements with a small sample size. The mean scores suggest improvements in each of the components of mental toughness and had the sample size been larger many of the other analyses may also have been statistically significant.

The analyses also involved exploring the relationships between mental toughness and student's educational progress in relation to targets. Unfortunately, in the current pilot study there were no significant relationships between mental toughness and progress, nor were there any significant improvements in progress between the two stages of testing (before and after the intervention). However, there are several possible explanations of these findings. Firstly, the results are likely to have been influenced by the sample size as detailed above. Secondly, detailing progress in terms of below, on or above target seems to have resulted in little variance in the data. Typically, it is easier to find relationships (correlations) if progress is assessed using some kind of continuous rather than categorical scale. For example, sometimes student's progress is scored using national curriculum levels or scores on a particular assessment. Finally, it is also important to note that at this stage it is too early to conclude that mental toughness interventions do not influence student's progress. Many educational intervention studies suggest that it may take some time for improvements in a particular trait or ability to 'work their way through' to improvements on standardised tests.

Implications for practice

The results from this pilot study have a number of important implications for educational practice. Although only some of the improvements in mental toughness as a result of the intervention were statistically significant, the results are very promising in suggesting improvements as a result of mental toughness training. The school may therefore want to consider introducing mental toughness training into their curriculum for all students. They may also wish to consider a more detailed evaluation of training, for example using a larger sample size. In addition, given that each aspect of the intervention was administered in a single session in the current study, there may also be benefits of considering an increased amount of mental toughness training.

Although the intervention did not result in observable improvements in students' progress in the current study previous research has suggested close relationships between mental toughness and academic attainment. Therefore, the school may also wish to consider a more detailed examination of the effectiveness of mental toughness training on aspects of educational performance. Ideally, they could assess progress using several indicators, rather than a below/ on/ average categorization. They should also consider progress at a later date, perhaps at the end of the academic year.

Testimonials from Students who participated in the Mental Toughness Pilot

I believe it has helped me look more positively.

I have enjoyed the pilot group it has given me some good exercises to use when I am revising and preparing for exams. I also think I am now thinking more positively.

I enjoyed playing 'bop-it and I felt more confident.

I enjoyed the group activities and different methods of dealing with stress. Some of the methods have helped such as the relaxing music as it has enabled me to work longer.

I think the skills I learnt are very useful, especially at this time with exams. I feel that had I tried harder with it I would have helped me more.