EXECUTIVE SUMMARY

The Golf Foundation and East Ltd collaborated on a research project to design a golf-based life skills programme which developed life skills and resilience of the participants involved. The programme was developed in line with the understanding that golf is a sport with built-in life skills. The programme sought to transfer the skills that participants had learned and develop them further.

Children were recruited from a number of junior golf clubs and academies, aged between 11 and 16 years. The mental toughness assessment, MTQ48 Mental Toughness Assessment, was administered at the start and end of the programme. Scores were then used to establish whether there was a significant impact upon the Mental Toughness of the participants.

The results were outstanding and delighted members of the programme team. Average Mental Toughness increased by 20% during the programme. All other scales and subscales of Mental Toughness also increased due to the sample size of the study. Commitment, Control, Life Control Confidence and Confidence in Abilities showed increases large enough to be significant.

The PGA Teaching Professionals also acknowledged that their coaching style had changed as a result of the study, enabling them to affect change in a wider group of junior and adult golfers.

As a result of the study, the Golf Foundation now plans to roll out the findings of this study under the programme banner ‘Unleash your Drive’, and across the country in order to further increase its demonstrable social impact.

We would like to thank a number of parties who collaborated in this study and helped to make it a success:

- Brendon Pyle and the team at the Golf Foundation
- Jason Skelton and Rachel Hearty of East Ltd
- The PGA Teaching Professionals who engaged and delivered the programme: Alex MacGregor, Zachery Marsh, Matt Edgar and Tom Hide
- AQR and Dr John Perry who analysed the results
- All the young people who participated in the programme and took the time to complete the assessments and provide us with their feedback.
BACKGROUND

The Golf Foundation

The Golf Foundation is a charity committed to giving children and young people the opportunity to experience golf and benefit from the sport’s valuable life skills. The Foundation believes that golf can offer young people ‘Skills for Life’, a healthy life and a sport for life.

The Golf Foundation’s national development programme ‘HMSC Golf Roots’ increases the sport’s reach in schools and community groups, helps recruit and retain youngsters in golf clubs, and through golf promotes important life skills such as respect, confidence and resilience (termed ‘Skills for Life’) that young people can benefit from both on the golf course and in their wider lives.

Funding for the Golf Foundation comes from a combination of bodies within the sport such as The R&A, HMSC, the European Tour Professional Golfer Association, the Ryder Cup, England Golf, Sport England and the British Golf Industry Association. Increasingly funding bodies are focusing on being able to measure the social impact of the projects they support. Proposals which can demonstrate a tangible impact upon wider social issues are more likely to gain funding in the future as well as promoting the wider benefits of the sport to potential new junior golfers and their families.

The Research Project

The aim of this research project was to develop a new life skills programme (taken from the principles of a Mental Toughness Development Programme), based around the development of golfing skills and delivered by PGA Golf Professionals.

The Golf Foundation selected and invited to participate a number of leading PGA Golf Professionals who have delivered the charity’s programmes in recent times. These PGA Professionals, along with members of the Golf Foundation team and the Y est team, formed the core project team for this programme.

The project was carried out in several stages:

Mental Toughness Training and Programme Design

Led by the team from Y est, this two-day workshop enabled the team to be trained in Mental Toughness and then use this learning, combined with the team’s knowledge and experience in delivering golf programmes to young people, to develop a ten-week life skills programme based on the principles of Mental Toughness development.

Y est and the Golf Foundation then developed a Coaches’ Handbook and a Participants’ Handbook to support this new life skills Programme. The project was founded on the following coaching principles:

- Each session starts with a reflection on the last session (and the practice at home) to ensure that the previous learning is embedded.
- Learning is maximised by taking the participants outside of their comfort zone and by providing challenge.
- Learning is enhanced by the PGA Coaches asking great questions — open ended that encourage the participants to think.
- Following the reflection, each session will begin in a manner which builds commitment and engagement from each of the participants.

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- Following the reflection, each session will begin in a manner which builds commitment and engagement from each of the participants.
Analysis of the results was led by Dr John Perry, Head of Psychology at Mary Immaculate College (MIC) in Dublin, supported by PGA and QSG Coaches with significant experience in using Mental Toughness to help individuals and teams grow.

The project team met for a final time to discuss the results and share their experience and learning from this phase of programme delivery.

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Life Skills Research Project:

- Activities are carried out in a safe/structured/healthful place where the group can get on and no one gets bored or stuck.
- Activities are planned around a theme to be shared with the group.
- Activities are implemented by a team with shared/positive/united experiences.
- Activities are led by a mentor (such as breathing, visualization, etc.) before entering the opportunity to practice the activity with increased focus.
- Techniques are used to develop aspects of Mental Toughness as a normal part of the sessions.
- The Mental Tougness assessment, a valid and reliable psychometric measure, will be used to the participants outside of golf to assess their mental toughness.

Analysis of Results

MTQ Psychometric Measure

We chose to assess the impact of the ten-week life skills programme by using the MTQ48 psychometric assessment to measure any changes in the Mental Toughness of the participants from the start to the end of the programme.

MTQ48 is a valid and reliable psychometric assessment which measures Mental Toughness. It was developed by Professor Peter Clough, Head of Psychology at the University of Huddersfield and AQR Limited, a leading psychometric test provider.

Mental Toughness defines how effectively individuals deal with adverse pressure and challenges. It relates the mental toughness that every person adapts in everything they do and is closely related to qualities such as character, resilience and grit. We measure these qualities with the MTQ48.

The MTQ48 asks how we think which is a key driver for the development of behaviour and attitudes.

Results carried out under the direction of Professor Peter Clough have identified the four key components of Mental Toughness, these are called the Four Cs – Control, Commitment, Challenge and Confidence.

A significant amount of research has been carried out which demonstrates a correlation between increased levels of Mental Toughness and:

- Performance of an individual (in exams, tests and other measurable outcomes)
- Positive behaviours
- Relaxed and balanced working.
- Reduced levels of bullying and antisocial behaviours.

If the Skills for Life Programme can be shown to have a positive impact on the Mental Toughness of the participants, the overall impact of the programme can be demonstrated.

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Yeast Ltd

Yeast Ltd formerly AQR Coaching, is an organisation which specialises in helping organisations get the most out of their people. They are the experts in applying Mental Toughness coaching and a range of other techniques to improve the performance of individuals, teams and organisations.

The team at Yeast have had a lot of successful careers across a wide range of sectors and disciplines and are all qualified Coaches with significant levels of experience in using Mental Toughness to help individuals and teams grow.

Programme delivery involves working with Senior Management teams in large and medium size organisations to help teams look at what they do and help others and improve the services we offer our core clients.
The Two-Day Workshop

The two-day workshop was highly interactive and received feedback from all participants engaged with the theory on day 1 and contributed to the development of the programme on day 2. Feedback from everyone who took part was extremely positive, one example is:

“Takes an inquisitive approach to the content over the two days — great to see someone so passionate about what they are delivering, yet still willing to let us design the programme and just guiding us to get the best end product.” Matt Edgar

Initial Review Meeting

Only four of the seven PGA Teaching Professionals (Pros) who attended the workshops managed to successfully deliver the first phase of the life skills programme. The feedback that we have from the Pros and coaches was excellent. However, it highlighted that the group was not completing the programme outlined by the PGA Teaching Professionals.

Outputs from the workshop enabled the East and Golf Foundation teams to detail a ten-week life skills programme along with creating a Coaches’ Handbook and Participants’ Handbook to support the delivery of the programme.

Overviews and feedback from participants

Final Review Meeting

The three Teaching Professionals who attended this review session all reported on their findings and reflected on the effectiveness of the programme. Each of the Coaches’ reflections focused on different aspects of the life skills programme.

Tom Hide (Frinton GC) — reflected on aspects of improving the ability of participants to handle pressure and challenge and improve their buy-in and commitment.

Alex MacGregor (Addington Court GC) — reflected on how he had focused on life control and building confidence.

Zachery Marsh (Tonbridge GC) — reflected on how emotional control techniques had proved extremely powerful and how commitment to the sessions had been built during the programme.

Interestingly, when the results were reviewed, it highlighted differences between the clubs in line with the Pros’ reflections above:

One of the issues from the first phase was getting participants to complete the MTQ48 psychometric measure online. Coaches were reliant upon participants completing the measure over the course of the programme, but there was no evidence of this happening consistently, and some were having to chase participants repeatedly to complete the measure.

It was agreed due to a shortfall in the number of completed assessments that the Pros would all deliver a second phase of the programme to a new group of participants. All the Pros were keen to do this in order to help them complete the learning they had not been able to.

One of the improvements agreed for the second phase was to ask participants to complete a paper copy of the test during the first and last session. These would then be inputted into the system at the end of the programme.

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Each session starts with a reflection on the last session (and the practice at home) to ensure that the previous learning is embedded.

They had moved from teaching golf to coaching it and their style had changed as a result. Several of the Pros reported that following the training and practice, and had received feedback that the quality of their lessons had significantly improved.

All felt that they could read people better as a result of the training.

The life skills programme was useful in selling the benefits of lessons to parents - many parents had improved their children’s attendance at lessons as a result and it was expected that drop out rates and recruitment would be improved.

Coaches felt that the training helped them differentiate themselves from other teaching Pros in the area, both with young people and adults.

A couple of the Pros had talked to local schools about the programme with an extremely positive reception.

All felt that the flexibility of the programme allowed them to deliver lessons in their own style, only better.

One of the Pros had moved on to using the Mental Toughness feedback with members of his own coaching team, with an extremely positive effect.

One Pro reflected that two of his juniors involved in the study had begun to help as young volunteers at his coaching and holiday sessions, with one boy wanting to become a Golf Coach.

### Overview and Feedback from Participants

Some of the comments received from participants are as follows:

- "I used the breathing exercises to help me with my exams at school. As a result I felt less distracted and more able to concentrate. I feel the programme has helped me with everyday life."

- "Visualising and using the breathing techniques helped me calm down in exams and relax. This programme makes you better at golf and better outside of golf."

#### Overview of Participant Feedback

<table>
<thead>
<tr>
<th>The average overall impression of the Skills for Life Programme, on a scale of 1-10</th>
<th>The average score of how much the programme helped participants cope with stressful situations, on a scale of 1-10</th>
<th>The percentage of respondents who feel less stressed after completing the programme</th>
<th>The percentage of respondents who feel more able to concentrate after completing the programme</th>
<th>The percentage of respondents who feel they are a better golfer as a result of the programme</th>
<th>The percentage of respondents who have used some of the skills they have learned in activities other than golf</th>
<th>The percentage of respondents who would recommend the programme to a friend</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.0</td>
<td>8.14</td>
<td>85%</td>
<td>85%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The programme really helped me in life and in golf. Each week was different and was extremely fun."
Case Study of a PGA Teaching Professional

Tom Hide

Tom Hide is the owner of and Head Teaching Professional at Coastal Golf Academy based in Frinton-on-Sea. He was part of the original group of Golf Professionals that began the programme in March 2017.

Tom was an enthusiastic participant in the programme from the very start as he quickly recognised the benefits that the focus on Mental Toughness could bring to both his juniors and to his own business. As he is based very close to one of the sites (as a Golf Coach for The Kids), he was able to test out the techniques in practice. He was fascinated by the principles of Mental Toughness and has since borrowed some of its coaching vernacular. Tom was particularly complimentary about the positive impact that building reflection time into the sessions had on his participants and on him as a golf coach. Sparing the time to reflect and review after each session and at the start of the next one was found to be really helpful in keeping focus on the overall objectives, re-focussing on the position and managing through the inevitable challenges.

The programme taught Tom a lot of elements of Mental Toughness and apply them in his golf teaching to deliver better lessons and ultimately better results for his juniors.

A good example of the above approach is the “Pressure Putting” exercise that Tom incorporated into his sessions. Deliberately ramping up the pressure at certain times helped his participants to learn to handle distractions and pressure. As an exercise for the golfers to understand the concept of pressure, Tom used a scenario where they were told they would be playing the final round of a championship, and they would need to holing out the last putt to win. They were then required to imagine that they were watching someone else take the putt, and then they would try to re-create the same situation. This exercise was designed to allow the participants to reflect on their own experience of pressure and to understand how they could apply these techniques in real-life situations.

“Probably the biggest change for me was my increased use of questioning; rather than simply telling a participant what to do, I worked with them to help them to figure it out for themselves, albeit with guidance from me. I learned to use different language to connect with each of my juniors and to really personalise my approach to help bring out the best in each of them.”

In addition to the positive impact the programme had on his juniors, Tom has also embraced the techniques of Mental Toughness in his business and has written a number of benefits access to him personally. He is now a keen and committed advocate of the newly-constituted Skills for Life Programme offered by The Golf Foundation.

The programme overall has delivered significant benefits to his team in terms of increased focus and concentration, as well as improved performance. Tom has seen a noticeable increase in the number of children who have progressed from junior to senior golf, and he attributes this to the programme’s focus on Mental Toughness. Tom has also seen an increase in the overall enjoyment of golf among his juniors, as they have developed a greater sense of control and confidence in their abilities.

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RESULTS FROM ANALYSIS

Summary of the Results

The findings of the analysis indicate significant increases in Commitment, Control, Life Control, Confidence in Abilities and Overall Mental Toughness of the participants in the Skills for Life Programme during its ten-week duration. Average Mental Toughness increased in the participants by 20.00% during the Programme. All other scales remained, but only several of the subscales showed increases large enough to be significant across the sample size of the study.

The findings of the analysis indicate significant increases in Commitment, Control, Life Control, Confidence in Abilities and Overall Mental Toughness of the participants in the Skills for Life Programme during its ten-week duration. Average Mental Toughness increased in the participants by 20.00% during the Programme. All other scales remained, but only several of the subscales showed increases large enough to be significant across the sample size of the study.

The findings indicate that the Skills for Life Programme developed and delivered during the study was effective at increasing overall Mental Toughness and a number of the scales of Mental Toughness.

Full Analysis of the study can be found in Appendix 1.

From studies which have taken place previously referenced in Appendix 2, it follows that participants in the programme should:

- Perform at a higher level in exams, tests etc.
- Behave more positively
- Have higher levels of employability
- Experience less stress
- Exhibit reduced levels of bullying and antisocial behaviour.
Commentary on the Results

These results demonstrate the impact of coaching Skills for Life in a golf-based programme and are exactly what we set out to achieve at the start of the study. Thanks to the hard work and dedication of the entire project team, we have developed a programme which has a significant effect on the Mental Toughness of the participants. As a result, the programme has the potential to improve the ability of those who participate in it to deal with stress, pressure and challenges both inside the game of golf and in other aspects of their lives.

Peter Wortley, Yeast Ltd

The belief in Skills for Life has underpinned the programmes of the Golf Foundation for a number of years – however, the results of this study are so exciting because for the first time we can evidence that golf does enhance the wider lives of young people and thanks to Peter and the PGA Coaches involved we now have a practical and evidence-based method of helping more PGA coaches to teach the skills in normal golf sessions.

Brendan Pye, CEO
Golf Foundation

This is an excellent example of the application of the Mental Toughness concept which is delivering real change. The research shows that Mental Toughness is one of the most important enablers in developing young people so that they achieve more, enjoy better wellbeing and become better equipped to deal with the challenges that they face now and into the future.

Peter Wortley and his colleagues are to be congratulated for using the MTQ48 measure both for diagnosis of individual needs as well as for evidencing change and exactly where that change is happening. It is so important to make a difference in situations such as these so that the skills are built into their mental toughness for many of life’s future challenges.

Doug Strycharczyk, AQR Ltd.

NEXT STEPS AND RECOMMENDATIONS

Given the strength of the results of this study it is extremely important that the Golf Foundation work on a plan to roll this programme out to the wider golf community in the UK.

The recommendations below are a combination of how the Golf Foundation can raise awareness of the results and power of the programme, along with some suggestions about how the programme can be rolled out in a controlled manner.

Recommendations

1. Publish the findings in an executive summary, name the programme with its own clear identity and share with golfing and non-golfing media. This includes a national media campaign involving GF Ambassador, Andrew Beef Johnston, and potential profile via Naga Munchetty on BBC Breakfast.

2. Retain the 4 PGA Coaches as ‘Unleash your Drive’ Ambassadors to help promote the findings and programme to a wider network of HSBC Golf Roots Coaches and other PGA members.

3. Retain the services of Yeast Ltd to help develop and deliver a training module to a wider network of PGA Coaches, with the support of the PGA. This should include the business model for coaches and the selling points to potential parents.

4. Golf Foundation to explore further how the learning from this study can be expanded to resources and training for schools and community groups.

5. Future measurement of participants will not be required but the GF and Yeast could develop a very simple survey (e.g. smiley faces) that can be used to show change from before to after the 10-week programme.

Peter Wortley, Yeast Ltd.

These results provide tremendous support for the Skills for Life programme. Mental toughness is a personality trait that is not easily changed. This means that the 15-20% changes seen here are not only significant but we can reasonably expect them to last a lifetime. The benefits of the programme to the young participants will go far beyond sport performance, as they can fall back onto their increased mental toughness for many of life’s future challenges.

Dr John Perry, Head of Psychology, MIC.

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Brendan Pye, CEO
Golf Foundation
Forty-two participants completed the mental toughness questionnaire four times over two occasions with an intervention to develop mental toughness in between.

Descriptive statistics

Data were 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

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Toughness</td>
<td>1.00 8.00</td>
<td>1.00 10.00</td>
</tr>
<tr>
<td>Challenge</td>
<td>1.00 9.00</td>
<td>1.00 9.00</td>
</tr>
<tr>
<td>Commitment</td>
<td>1.00 8.00</td>
<td>1.00 8.00</td>
</tr>
<tr>
<td>Control</td>
<td>1.00 9.00</td>
<td>1.00 9.00</td>
</tr>
<tr>
<td>Confidence - Abilities</td>
<td>1.00 10.00</td>
<td>1.00 10.00</td>
</tr>
<tr>
<td>Confidence - Interpersonal</td>
<td>1.00 8.00</td>
<td>1.00 8.00</td>
</tr>
</tbody>
</table>

For all variables, mental toughness was slightly below the norm, which would be expected for such a group, but on average, all variables fell within the moderate category relative to normative values. A cursory glance at the mean difference for each variable suggests that the intervention had a positive impact on mental toughness.

To achieve this, a paired-samples t-test was conducted. The results of this are presented in Table 2.
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Table 2. Pre- and post-intervention scores for mental toughness variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mdiff</th>
<th>t</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Toughness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenge</td>
<td>.79</td>
<td>2.65</td>
<td>.011</td>
<td>.41</td>
</tr>
<tr>
<td>Commitment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>.83</td>
<td>3.80</td>
<td>.001</td>
<td>.53</td>
</tr>
<tr>
<td>Control - emotion</td>
<td>.81</td>
<td>2.50</td>
<td>.014</td>
<td>.45</td>
</tr>
<tr>
<td>Control - life</td>
<td>.81</td>
<td>2.25</td>
<td>.025</td>
<td>.45</td>
</tr>
<tr>
<td>Confidence</td>
<td>.93</td>
<td>3.06</td>
<td>.002</td>
<td>.45</td>
</tr>
<tr>
<td>Confidence - needs</td>
<td>.74</td>
<td>2.87</td>
<td>.007</td>
<td>.44</td>
</tr>
<tr>
<td>Confidence - perceived</td>
<td>.48</td>
<td>1.49</td>
<td>.198</td>
<td>.26</td>
</tr>
</tbody>
</table>

Note: Mdiff = mean difference, t = critical t-value, p = p-value for probability of null hypothesis being true, d = Cohen’s d effect size.

The findings of the paired-samples t-test indicate statistically significant increases in commitment, control, and overall mental toughness. To control for multiple comparisons, we employed the Bonferroni correction method, which adjusts the significance level to account for multiple tests. The p-values (p < .001) for each variable are less than the adjusted significance level (p < .001), indicating that the observed effects are likely to be statistically significant (p < .001). Therefore, none of the findings were considered to be false discoveries.

Next, we consider each of the variables individually.

Mental Toughness:
Overall mental toughness presented a statistically significant increase between pre- and post-test scores. The mean difference of .79 from the pre-test score of 3.95 represents an increase of 20.00% (Figure 1).

Challenge:
Challenge did not significantly change over the test period (Figure 2), presenting only an increase of 6.67%.

Commitment:
The largest difference was present for commitment, which increase by .93 from the pre-test score of 3.71, representing an increase of 25.07% (Figure 3).

Control:
Overall control significantly increased in the pre- and post-test (20.10%; Figure 4). Of the subscales, there was a significant increase in life control (20.00%; Figure 5), but not for emotional control (9.01%, Figure 6).

Figure 1: Pre- to post-test effects for mental toughness
Figure 2: Pre- to post-test effects for challenge
Figure 3: Pre- to post-test effects for commitment
Figure 4: Pre- to post-test effects for control
Figure 5: Pre- to post-test effects for control - life
Figure 6: Pre- to post-test effects for control - emotion
Confidence

Overall confidence significantly improved from pre- to post-test (16.78; Figure 7). A similar significant effect was evident for confidence in abilities (15.95%; Figure 8), but there was no statistically significant effect for interpersonal confidence (11.46%; Figure 9).

Figure 7. Pre- to post-test effects for confidence

Figure 8. Pre- to post-test effects for confidence abilities

Figure 9. Pre- to post-test effects for confidence: interpersonal
Clough, P.J., Earle, K., Cross, L., Fields, S. & Clough, A. “Mental toughness in higher education: Relationships with achievement and Dropout in University students.”

St Clair-Thompson, H., Bugler, M., McGeown, S., Clough, P. “Adolescent’s classroom behaviour: The contributions of motivation and mental toughness.”


Dr Peter Clough

The Head of the Department of Psychology at the University of Huddersfield Dr Clough is a professor who has gained global recognition for his development of the concept of mental toughness (MT), how it be measured and how it can be harnessed.

Peter Clough is writer and co-writer of almost 50 articles and books on the subject, including 2002’s ground-breaking Developing Mental Toughness, a big seller acknowledged as the definitive guide.

He has developed the world’s first psychometric measure of mental toughness, named MTQ48, available online in more than 12 languages including Chinese and has identified what he calls the 4Cs - Control, Commitment, Challenge and Confidence - as the key traits of someone who is mentally tough.

Professor Clough’s work has helped ensure that the UK is the world leader in MT research and he is involved with a pioneering project, 5,000 secondary school pupils among to appraise their own mental toughness and help them develop MT attributes.

“You can’t make somebody taller, but you can give them a step ladder,” he says, adding that students who can develop MT attributes have been shown to cope with short-term pressure and achieve better results.