

Improving Numeracy to Increase Financial Capability

‘WHAT WORKS’ PROJECT REPORT APRIL 2018

National Numeracy
Phoenix House 32-33
North Street
Lewes BN7 2QJ

Funded by

Background

Introduction to National Numeracy

National Numeracy is an independent charity founded in 2012 with the aim of improving numeracy across the UK. This was partly in response to the 2011 Skills for Life survey, which showed that around half of working-age adults have functional numeracy skills at primary school levels.

Alongside campaigning to raise awareness of this issue and to change prevalent negative attitudes to mathematics in the UK, National Numeracy has developed a range of resources, including 'The Essentials of Numeracy', a map of the skills and attitudes needed to use numbers and data confidently in daily life, the 'Family Maths Toolkit' website to help parents support children, the 'Passport Maths' website which helps children catch up with maths if needed as they enter secondary school, 'Star Dash Studios', a mobile game app aimed at the least engaged young adults, and '**The Challenge**' website and a paper-based '**Quick Check**', both of which were used in this project.

The Challenge online learning tool

The Challenge website (www.nnchallenge.org.uk) is the online learning tool which was used in this project to assess and improve adults' numeracy skills. There are several key steps in the learning journey:

1. Register	Enter email address, first name, last name, choose a password, then complete the short profile questions, including age, gender, postcode, and 'reason for registration'.
2. Assess	Take the initial numeracy assessment. This is adaptive, meaning that questions are presented according to how the individual is answering (i.e. if they are getting the easier questions wrong, then they do not get presented with the harder ones). It usually takes around 25 minutes to complete.
3. Learn	The results from the assessment provide overall numeracy level, strengths and weaknesses, and a target to work towards. The system then suggests learning resources to visit. All the resources are links to external websites and are selected for the user according to overall level and strengths and weaknesses.
4. Reassess	The participant can take the assessment again at any time to see improvement in skills. Three quarters of learners who get this far do show an improvement.

The paper-based Quick Check

National Numeracy developed a paper-based Quick Check tool, primarily designed to identify which adults will benefit from improving their numeracy. This was created for use in situations where time is short, or there is no digital access, or adults are too demotivated to initially engage in a lengthier skills assessment. For this project the Quick Check comprised:

1. Five numeracy questions, in increasing difficulty, from Entry 2 up to Level 1.
2. Two attitudinal questions, designed to consider the individual's appetite for improvement.

Table of Contents

Background.....	1
Introduction to National Numeracy.....	1
The Challenge online learning tool	1
The paper-based Quick Check	1
Executive summary	3
The project: ‘Improving numeracy to increase financial capability’	3
The evaluation	3
Key findings.....	3
Points to consider	4
Recommendations.....	4
Learning and sharing activity	5
1. Overview of the project.....	5
1.1 Aims and objectives of the project	5
1.2 Target audience, timescales and project management.....	6
1.3 ‘Theory of Change’ for the project.....	7
1.4 Project activities	7
1.5 Project development work	8
2. Overview of the evaluation approach	9
2.1 National Numeracy’s evaluation approach.....	9
2.2 Research questions	9
2.3 Research method.....	10
3. Outcome evaluation	12
3.1 Key outcome findings from the Virtual Strand	12
3.2 Outcome findings from the Delivery Strand	17
4. Process evaluation.....	20
4.1 Process findings from the Virtual Strand	20
4.2 Key process findings from the Delivery Partner Strand	21
5. Comparison of the two strands	24
5.1 The population in the Virtual Strand.....	24
5.2 The population in the Delivery Partner Strand	25
5.3 Comparison of numeracy levels.....	26
5.4 Comparison of attitudes to improving numeracy	26
6. Limitations of the evaluation and future evaluation	27
6.1 The Virtual Strand	27
6.2 The Delivery Partner Strand.....	28
7. Implications and recommendations for policy and practice.....	29
7.1 Recommendations	29
7.2 Rationale and other findings.....	29
7.3 Suggested further research	30
8. Sharing and Learning Activity.....	30

Executive summary

The project: ‘Improving numeracy to increase financial capability’

National Numeracy (NN), the charity focused on improving everyday maths skills for all across the UK, worked with the Money Advice Service (MAS) as part of the ‘What Works’ initiative, to research the following question:

“To what extent do improvements in people’s numeracy enhance their attitudes and motivations in making financial decisions?”

The activities ran from December 2016 until December 2017, with the target audience being working-age adults within and outside the workplace, and those at risk of falling into problem debt within the ‘struggling’ and ‘squeezed’ segments of society. Activity was split into two strands:

- **‘Virtual’** - in which NN worked with online partner MoneySavingExpert.com to engage adults directly, digitally, with improving their numeracy. A range of activity was undertaken, with signposts to online numeracy provision featured in their forum posts, Campaign of the Week in the weekly Tips email, tweets, mentions from Martin Lewis, and presence on the Financial Capability page of their website. Altogether 19,166 people registered on NN’s Challenge website as a result of this activity.
- **‘Delivery Partner’** - in which NN partnered with employment support organisation Prospects in their South West region, to try to engage long-term unemployed adults in improving their numeracy as part of face-to-face support to help them find employment. It naturally proved much harder to engage the long-term unemployed in this strand than the wider group of adults in the Virtual Strand. A variety of approaches was trialled, with various barriers being encountered, resulting in 498 unemployed adults being engaged in at least one activity.

The evaluation

Outcome and process evaluation of the project activities was carried out, including analysis of qualitative feedback. Evaluation was carried out by NN in-house, with support from an evaluation and learning partner appointed by MAS.

Key findings

The key findings from outcome evaluation in the Virtual Strand were that:

1. People improved their Financial Capability Mindset as a result of engaging with National Numeracy’s provision.	2. The more that adults engaged with the numeracy provision, the more they improved their Financial Capability Mindset.
3. The higher an adult’s level of numeracy, the better their Financial Capability Mindset was likely to be.	4. Improvements in numeracy score correlated with improvements in Financial Capability Mindset.

The Virtual Strand also produced learnings about the power of working with a well-known, far-reaching, trusted brand in engaging adults in improving their numeracy. This can work well if the activity is a visibly joined-up effort across multiple communication channels and is seen to be integral to the financial information offered. In the right context, priming of individuals with multiple interactions can improve

engagement, but another learning was that an online registration process for the numeracy resource which is perceived as lengthy can reduce engagement rates.

The key findings from the Delivery Partner Strand were that:

1. A paper-based Quick Check tool is effective to triage numeracy levels and identify those who will benefit from improving their numeracy and financial capability.	2. There are a number of barriers to engaging the unemployed via a delivery partner, notably attitudes, including adults not seeing the value of numeracy in daily life, and having a lack of self-confidence.
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The project showed that an unemployed adult who has been identified as being someone who would benefit from improving their numeracy, should first engage with attitudinal support to ensure that they begin to see the value of maths in daily life and their search for employment, and to increase self-confidence before they tackle skills training. This will improve the likelihood of them engaging and improving their skills.

It was also found that if an organisation has the infrastructure to support digital engagement, and offer claimants the means of improving their skills themselves online, then it may be better to administer the Quick Check digitally rather than on paper, as it can be difficult to later make the transition from paper to digital.

Points to consider

Methodological limitations:

- There were no control or comparison groups, due to practical difficulties such as measuring skills levels.
- In the Virtual Strand, only a post-intervention survey was used, as it was felt that a pre-intervention survey would have inhibited engagement rates.
- In the Delivery Partner Strand, difficulties with getting unemployed adults to engage at all stages of the project prevented a statistically significant outcome evaluation being carried out. Learning from this strand came from process evaluation.

Recommendations

Intelligence from this project builds on and strengthens the findings in MAS's [adult numeracy and financial capability](#) research published in November 2017, which showed that numeracy positively correlates with financial capability, and asserts that confidence in using numbers in everyday life is associated with certain financial capability outcomes. Based on the findings from this project, NN makes the following recommendations:

- 1. Numeracy resources should form an integral part of all online provision to support adults with managing their money or debt, so that individuals are able to benchmark their current everyday maths skills and attitudes, and then work towards improvement.**
- 2. Within face-to-face support for low-skilled and unemployed adults, a paper-based Quick Check tool should be used to identify which adults will benefit from making improvements to their numeracy, followed up with attitudinal support where necessary, prior to engagement with skills training.**

Subject to funding, NN would like to continue evaluation of the adults who engaged via the Virtual Strand, and extend this approach to reach MAS customers. NN would also like to take the learnings from the Delivery Partner Strand and implement an improved intervention with Prospects, in other employment services, and in selected Jobcentres.

Learning and sharing activity

As well as making the evaluation findings available via the Financial Capability Evidence Hub, NN plans to:

- Work with MAS to develop a press-release announcing the findings from the project.
- Explain the outcomes on the NN website.
- Incorporate the findings into future work with providers of financial capability and organisations who support the unemployed.

1. Overview of the project

1.1 Aims and objectives of the project

The key research question National Numeracy (NN) set out to answer in this project was:

“To what extent do improvements in people’s numeracy enhance their attitudes and motivations in making financial decisions?”

NN chose to run the project activity across two strands:

Virtual Strand

In this strand NN worked with an online partner to engage adults directly, digitally, with improving their numeracy. NN partnered with MoneySavingExpert.com (MSE) to evaluate how effective the website and supporting communications would be as a means of engaging adults in improving their numeracy and, as a result, their financial capability.

MoneySavingExpert.com (MSE) is the UK’s biggest consumer website dedicated to cutting consumers’ bills and fighting their corner. Set up in 2003 by financial journalist Martin Lewis, the free-to-use consumer finance help resource aims to show people how to save money and campaigns for financial justice. It’s based on detailed journalistic research and cutting-edge tools, and has one of the UK’s top 10 social networking communities. During February 2018 MoneySavingExpert had 16.3 million users, visiting the site 28.7 million times, and looking at over 73.6 million pages. Over 13 million people have opted to receive the free weekly ‘Tips’ email and more than 1.7 million users have registered on the forum.

Delivery Partner Strand

In this strand NN worked with a face-to-face delivery organisation, to try to engage unemployed adults directly. NN teamed up with **Prospects** for this strand, in order to evaluate how effective it is to work with a delivery partner as a means to engage and support Universal Credit claimants to improve their numeracy and also their financial capability.

Prospects are part of the Shaw Trust Group and have worked to develop potential and improve adults’ employment prospects for over 20 years. Alongside National Careers Service, they bid for government

contracts to deliver the Work Programme to the long-term unemployed across the UK. Claimants are directed to a Prospects Delivery Centre, have meetings with a Key Worker, and jointly develop an action plan. NN worked with Prospects to reach Universal Credit claimants (incorporating income-based Jobseeker's Allowance, Housing Benefit, Working Tax Credit, Child Tax Credit, income-based Employment and Support Allowance and Income Support). For the project NN undertook activity across Prospects' South West region, at centres in Bournemouth, Bristol, Taunton, Exeter and Truro. Each centre handles 200 – 300 customers and conducts one-to-one sessions with the majority of them, usually once a fortnight. Taunton and Truro also deliver outreach programmes across their respective counties.

1.2 Target audience, timescales and project management

By taking this approach across the two strands, NN aimed to reach the following target groups within the 'What Works' initiative:

Target audience for the project		
<ul style="list-style-type: none"> Working-age adults within the workplace and outside the workplace. 	<ul style="list-style-type: none"> Working-age adults within the 'struggling' and 'squeezed' segments. 	<ul style="list-style-type: none"> Individuals who have low numeracy skills and are therefore at risk of falling into problem debt.

The project ran from December 2016 until March 2018:

December 16 - March 17	April 17 – December 17	January 18 – March 18
Set-up and planning	Engagement and delivery	Evaluation

NN managed the initiative from their offices in Lewes using an informal agile approach with a project team comprising:

- Project Director to approve deliverables at each stage.
- Project Manager to oversee the overall plans, timescales and budget.
- Project Coordinator to implement much of the activity with the partner organisations.
- Data Analyst to monitor and evaluate the project activity, implement much of the activity with the partner organisations, and work with the external evaluator appointed by MAS.
- Communications Manager to develop content for the digital interventions, create engagement tools for the Delivery Partner strand and gather case studies.

In addition to this, NN engaged a pedagogical consultant to write material as they upgraded the assessment content in the Challenge. The charity also worked with an external agency on the technical development work which came out of the project, and with the Applied Psychology Department at the University of Portsmouth on creation of the attitudinal assessment which was introduced as part of the activity.

NN liaised closely with the project contact at MAS and the fund's evaluation and learning partner, and had monthly update calls. Progress and the budget were reviewed monthly and formally reviewed with MAS and adapted quarterly. Overall the project ran to the proposed timescales and came in on budget. The continual support and input from MAS was much appreciated.

1.3 'Theory of Change' for the project

At the start of the project, NN developed a 'theory of change' for the intervention. A theory of change is an illustration of how and why a desired change is expected to happen in a particular context, and is focused on mapping out the steps between project activities and how these lead to goals being achieved.

What Works Project - Theory of Change - National Numeracy								
	Problem	Input		Activity	Output		Outcome	Impact
	What is it trying to achieve or solve?	Things that go into the project		Activities produced by the inputs	Services & products produced by the inputs		Changes in attitudes, knowledge and behaviours that result from your outputs	Longer term or ultimate outcomes
Common to both strands	Low adult numeracy skills in the UK are inhibiting financial capability	What Works Funding	Beneficiaries' time	The Challenge development (mobile-friendly, assessment more appropriate, and possibly to embed attitudinal resources)	Number of people reached / engaged		People demonstrate improvement in Numeracy as well as...	People are confident and competent using numbers and data in everyday life to make good decisions.
		Attitudinal Resources (inc. videos, e-learning, surveys (inc. FC Mindset)	NN staff time		Recommendations shared	Refined Attitudinal Resources	...in self-confidence when it comes to money matters.	
		The Challenge	MAS team support	Processes and process evaluation	Data Analysis	Refined Challenge	Other Data	People are financially capable and able to manage their money well day-to-day
Delivery Partner Strand only	At least 78% (estimated) of benefit claimants have functional numeracy of below the equivalent of a C at GCSE, and this inhibits their employability.	Screener	Third party trainer resources		Delivery staff "trained / briefed"	Third party "trained / briefed"	Beneficiaries demonstrate improvement in Attitudes to Numeracy.	
	There is currently no process at Prospects to identify poor numeracy There is currently no process at Prospects to support those claimants who would like to improve their numeracy.	Delivery staff time	Third party trainer staff time		Refined screener (multi-choice / digital if appropriate)			
Virtual Strand only	Despite being recognised as a necessary component of FC, there is no prominent call to action specifically regarding numeracy on financial information websites. Adults are reluctant to invest time and effort in longer term improvement in skills and confidence, rather than continual 'sticking plaster' approach.	MSE Website	MSE Time		Presence on the MSE website			

Figure 1: The Theory of Change that NN developed for the MAS What Works project.

1.4 Project activities

NN carried out activities for the project as follows:

Virtual Strand

A variety of activities were planned with the team at MSE and executed over a seven-month period. These included:

- Forum posts (posted by NN).
- Twice featuring as 'Campaign of the Week' in the Weekly Tips email (supported by MSE tweets and Facebook activity).
- Direct mentions from Martin Lewis in both tweets, on Facebook, and a forum post.
- Presence on the Financial Capability page of the MSE website.

All activity was designed to entice readers to register on the Challenge. In some instances, this involved a direct link to the website. In others, NN employed quizzes or other engaging content to stimulate interest first, or in the case of the forum, debate about connected topics, which would hopefully then lead to registrations.

NN also took the opportunity to invite those who had given their email addresses (via the Quick Test in Martin Lewis's forum post) to register if they hadn't already done so. Additionally, NN emailed all registrants with an invitation to 'Recommend a Friend'.

Delivery Partner Strand

NN met with regional management at Prospects and agreed the following activity:

- NN visited each Prospects centre in turn to introduce their work to the team of Key Workers.
- The Key Workers then gave the paper 'Quick Check' to each existing customer they met during their one-to-one sessions. For new customers, it was administered during the induction process.
- Key Workers then encouraged any claimant scoring less than five on the numeracy questions in the Quick Check to register on the Challenge website to take the more detailed assessment.
- NN then collected the paper surveys, entered the details (including email address) on to a system (Excel spreadsheet) and began contacting people via email to complete a digital survey, which included the Financial Capability mindset questions.

1.5 Project development work

During the project, NN undertook various development work to support the activity:

New Challenge skills assessment

MSE flagged early in the project that in order for them to support the project, the skills assessment within the Challenge would need to be made mobile-friendly, and NN built this development into the project plan. This entailed writing a new bank of questions for the assessment across five levels: Entry 2, Entry 3, Level 1, 'The Essentials of Numeracy', and Level 2. The Essentials of Numeracy is the threshold NN has identified as crucial for the needs of daily life and the workplace and to manage finances effectively. This sits above Level 1 (equivalent of a low pass at GCSE), but below Level 2 (equivalent of a high pass at GCSE).

NN created eight questions at each level for each of four areas of numeracy: Numbers, Operations and Calculations, Shape, Space and Measures and Handling Data. NN devised an alternative version of each question to minimise the chance of anyone learning the answers. This made a bank of 320 questions altogether, from which items are presented to the user according to how they answer. While writing the questions NN ensured that at least a quarter of them used money as a theme, to ensure that they were emphasising the importance of numeracy in financial capability.

NN decided to make the whole assessment multiple choice in order to reduce anxiety for adults who feel uneasy with maths. This also helped in making the assessment work well on mobile phones.

Attitudinal assessment

National Numeracy has always believed that much of the issue with numeracy in the UK is due to attitudes. NN asserts that any adult can improve their skills, if they see the *value* of numeracy in their life, if they *believe* that it is possible for them to improve, and if they accept that it's going to take some *effort*.

NN had already included the development of an attitudinal assessment as part of this project plan (with additional support from the Nuffield Foundation who are interested in this area of work). When NN presented these ideas to Prospects they confirmed NN's beliefs and felt that a way of measuring these attitudinal qualities and individuals' confidence would be very useful.

In December 2016 NN began scoping development of the attitudinal assessment to sit alongside the numeracy skills assessment within the Challenge website. In January 2017 NN met with Professor Sherria

Hoskins at the University of Portsmouth and took advice on design, to ensure validity and reliability. NN then worked with Dr Darren Van Laar, head of the Applied Psychology department at University of Portsmouth to develop the assessment.

NN wrote over a hundred statements about confidence with numeracy, including items from the MAS framework, each with five options: 'strongly agree', 'agree', 'neutral', 'disagree', and 'strongly disagree'. NN then held a 'read aloud' session with long-term unemployed at the Prospects centre in Weymouth, to check that the statements were understood as intended. This led to re-writes, a second 'read aloud' session, and further re-writes.

NN then used the existing database of Challenge registrants to test the questions, with over 1,000 taking part. This produced a rich data-set which Dr Van Laar was able to analyse, and this showed that there were 28 questions which produced strong, clear outputs. These were spread across six factors: self-belief, numeracy for life, financial confidence, growth mindset, confidence with numeracy, and grit.

NN then wrote more statements to strengthen some of the factors, and sent the new set of around 50 questions to a further 1,000 Challenge users. Additional analysis showed that there were 24 key statements which produced strong and useful data across seven factors: confidence with numbers, confidence with money, self-confidence, appetite for learning, value, belief, and effort. The final three factors refer to appreciation of the 'value' of numeracy, 'belief' that you can improve and acceptance that 'effort' will be needed.

NN worked with digital agency Coherence to create the assessment within the site. NN called this an Attitudes Quiz and framed it as a friendly multiple choice activity, with output across the seven factors, providing advice to individuals on how to improve their confidence. The assessment went live in October 2017.

2. Overview of the evaluation approach

2.1 National Numeracy's evaluation approach

National Numeracy selected to carry out 'outcome evaluation' of the activities in the project, to assess how much the intervention affected adults' numeracy and financial capability mindset. NN also opted to carry out 'process evaluation', as it was felt that it would be valuable to compare the different methods trialled, in order to identify which approaches were successful. It was not felt to be feasible to include a control or comparison group in this project, as NN would have had to measure the numeracy levels of this group, and using an assessment to do this has been shown in itself to affect the skills and confidence levels of the participants.

NN decided that an 'economic evaluation' was not needed, as the project was not assessing the cost of intervention, purely the methods and the outcomes.

2.2 Research questions

As part of the MAS 'What Works' initiative, NN set out to add to existing evidence of the types of interventions that can make a measurable difference to people's financial capability. NN was interested in both what works and what does not. NN focused on the impact that engaging adults with their numeracy can have on their financial capability mindset. NN's specific questions were:

Overall:	“To what extent do improvements in people’s numeracy enhance their attitudes and motivations in making financial decisions?”
Virtual Strand (MSE):	<p>“When made aware through MSE channels, how many people engage with the National Numeracy Challenge and use it to improve their numeracy and financial capability?”</p> <p>“How effective is the National Numeracy Challenge as a means to support working age adults to improve their financial capability skills (specifically ‘applied numeracy’ and ‘problem solving’ in the Adult Financial Capability Framework)?”</p> <p>“How effective is the National Numeracy Challenge as a means to support working age adults to improve their financial capability attitudes and motivations?”</p>
Delivery Partner Strand (Prospects):	<p>“How effective is working with a Delivery Partner (Prospects) as a means to engage and support Universal Credit claimants to improve their numeracy and also their financial capability?”</p> <p>“How effective is the National Numeracy Challenge as a means to support Universal Credit claimants to improve their financial capability skills (specifically ‘applied numeracy’ and ‘problem solving’ in the Adult Financial Capability Framework)?”</p> <p>“How effective is the National Numeracy Challenge as a means to support Universal Credit claimants to improve their financial capability attitudes and motivations?”</p>

2.3 Research method

NN used different methods to evaluate the outcomes in each strand of the project:

Both strands – How National Numeracy measured change in Financial Capability Skills (numeracy)

Measuring change in numeracy skills was simply a case of comparing a person’s scores on the online assessment tool. NN used their first assessment score and compared it to their top score - if there was a change for the better, the individual had improved their financial capability (FC) skills.

Virtual Strand - How National Numeracy measured change in Financial Capability mindset

NN contacted participants in weekly waves, allowing an average period of 130 days from their individual dates of initial registration. As at 30th January, NN had received 2,064 responses to 16,352 requests. Of these, NN was able to match 1,971 to their email addresses. To ensure that we can have a 99% confidence level, with a 3% margin of error, NN needed to get 1,687 responses. As this was surpassed, we can be confident that any results are representative of the wider population (albeit with the knowledge that this group is self-selecting).

For the survey itself, NN did not have the luxury of a pre-evaluation survey as it was decided at the start of the project that this would reduce engagement. NN therefore had to ask the nine questions twice, once with a prefix of ‘How you felt four months ago, BEFORE you registered on the Challenge’ and then with the prefix ‘RIGHT NOW, since you registered on the Challenge website’. NN also gave people the opportunity to fill in a free-text box to tell NN anything else they would like to, with regards to any changes they might have felt with managing their money. The nine questions are attitudinal, using a five-point Likert scale (Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree). NN then used chi-squared

testing to measure whether the pairs of BEFORE and NOW questions were independent. If so, this would indicate that something had changed during the intervention.

Delivery Partner Strand – How National Numeracy measured change in Financial Capability mindset

Initially NN engaged people by using a paper-based survey, delivered by the Key Workers in the centres, during their regular one-to-one sessions. Having collected their email addresses from these surveys, NN contacted the potential beneficiaries via email to ask them to answer the FC mindset questions. Only 12 out of 348 people responded (3%) even after contacting the centres to chase up. NN therefore changed the process to include the whole of the initial engagement piece in one go. This included a five-question numeracy Quick Check, the nine FC mindset questions, 28 numeracy attitudinal questions (formulated in the early days of the attitudinal work) and a link to the Challenge. By the end of the project NN had collected 184 pre-evaluation surveys. All 60 participants in the final evaluation completed a Quick Check (five numeracy questions) and at least nine FC mindset questions. All but six people also answered the 28 numeracy attitudinal questions. 49 out of 60 people (82%) registered on the Challenge website. 60 out of 184 (33%) participants then answered the post-evaluation survey, which included an exact repeat of the Quick Check as well as all nine FC mindset questions and all 28 numeracy attitudinal questions.

This approach enabled NN to use the same methodology as the Virtual Strand to measure change. All attitudinal questions were presented as a five-point Likert scale. Before and after surveys were linked via the email address given in each survey. Each response was scored from one to five, with one being the least financially capable answer and five the most. The ‘before’ score was then subtracted from the ‘after’ score to get an ‘improvement’ score. Overall (and average) improvement scores could then be calculated for each person and indeed each question. The total score for an individual was taken as the sum of all nine question scores. The maximum anyone could score was 45, and the minimum was nine.

Virtual Strand – How National Numeracy evaluated the processes

This entailed comparing the different approaches and routes to engagement. NN collected and compared data from the different activities. They included:

Measure	Source
Potential Audience	Collected from MSE / Twitter
Views/Impressions/Opens	MSE site / Twitter accounts / estimate where commercially sensitive
Visits to nnchallenge.org.uk	Google Analytics
Registrations and beyond	Challenge data

Delivery Partner Strand – How National Numeracy evaluated the processes

This entailed analysing the Quick Check data as well as data from the Challenge in three key areas, checking that:

- The Quick Check was effectively engaging claimants (feedback from Key Workers).
- The Quick Check was correctly identifying those who would benefit from improving their numeracy (Quick Check data).
- A sufficient number of claimants were registering on the Challenge website (Challenge data).

To aid this last part, NN passed Challenge activity data on claimants back to the Key Workers in Prospects Centres so that they could track the individual progress of their customers. NN also used qualitative feedback (Key Workers and claimants) to try and improve engagement rates when they proved to be too low.

3. Outcome evaluation

3.1 Key outcome findings from the Virtual Strand

National Numeracy’s evaluation in this strand resulted in four key findings:

Virtual Strand Key Outcome Finding 1:	People improved their Financial Capability Mindset as a result of engaging with National Numeracy’s provision.
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All nine of the questions showed a statistically significant shift to a more positive attitude or motivation following registration and engagement with the Challenge.

#	Question	FC Area	Chi-Squared Result	Strongly Agree %		Strongly Disagree %		% point increase
				Before	After	Before	After	
1	I think my approach to keeping track of income and expenditure works well	self-confidence	0	57%	62%			5%
2	I feel confident making decisions about financial products and services	self-confidence	0	44%	49%			5%
3	I can always find the time to sort out my finances	attitudes to managing money	0	41%	49%			8%
4	It is important to keep track of my household’s income and expenditure	attitudes to managing money	0	66%	71%			5%
5	I am disorganised when it comes to managing my money day to day	self-confidence	8.9772E-289			67%	71%	5%
6	I feel out of control when it comes to my finances	self-confidence	1.5255E-281			72%	75%	3%
7	Nothing I do will make much difference to my financial situation	attitudes to managing money	0			46%	53%	7%
8	I tend to buy things even when I can’t really afford them	self-control	0			58%	63%	6%
9	I tend to live for today and let tomorrow take care of itself	self-control	0			52%	58%	6%

Figure 2 – Number of respondents to each question is 1,971. The darker the shade of green, the greater the improvement in the most financially capable response to each question. Any apparent anomalies in ‘% point increase’ are due to rounding.

All nine statements showed a shift towards a ‘better’ attitude (see Figure 2). In all cases, the shift was significant. In the most striking change, the percentage of people who strongly agreed with the statement ‘I can always find the time to sort out my finances’ rose from 41% to 49%.

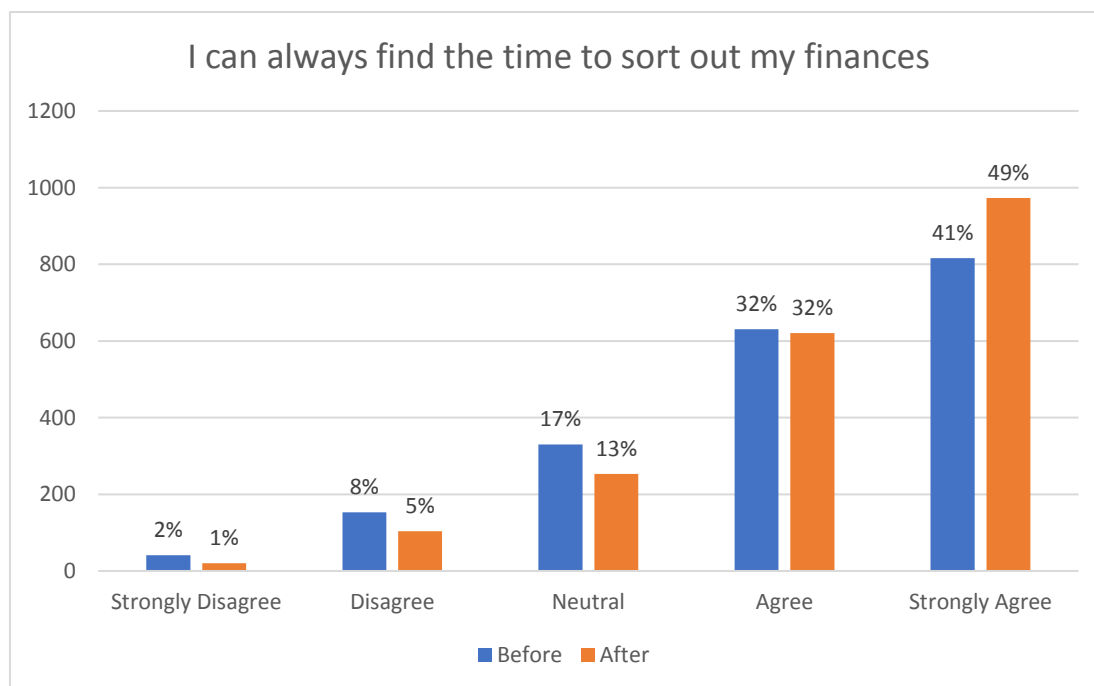


Figure 3 - Number of respondents is 1,971. This question showed the greatest shift to a more financially capable attitude. 157 more people ‘strongly agreed’ with this statement after registering on the Challenge website. This represents an increase from 41% to 49%.

As can be seen in Figure 4, percentage point shifts at the ‘most financially capable’ end of each statement ranged from three to eight percentage points. Plotting the percentage of people who gave the most financially capable response against percentage improvement shows an interesting picture. Overall there is a trend for a greater shift towards a better attitude when the starting percentage is lower.

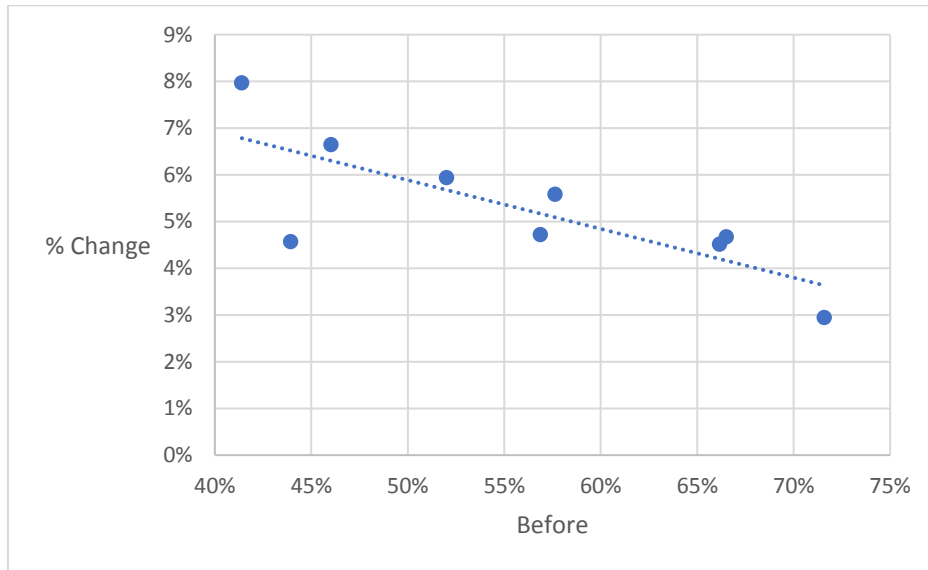


Figure 4 – The questions with the lowest overall financial capability scores show the greatest improvement. All questions were answered by 1,971 people. Each point on the graph represents an individual question.

Overall, 38% of those surveyed showed no net change to their attitudinal score. That is to say, some of their attitudes may have changed, but their overall score remained the same. Of this group, the majority (85%) did not change their attitudes at all. 44% of those surveyed reported at least a one-point increase. 18% reported at least a one-point decrease. The average change for all respondents was +0.96 points, in other words, overall people improved their FC mindset. See Figure 5 below for details.

Because NN had a pre- and post- attitudinal evaluation result for every person, NN was able to perform a paired sample t-test to see whether the differences matched a normal distribution with a mean of zero (no change). The resultant p-value was 3.8×10^{-55} , indicating that the chances of the two distributions (before and after) coming from the same distributions is extremely low. The inference is that they are from different distributions, and that there has been a significant change in people’s attitudes.

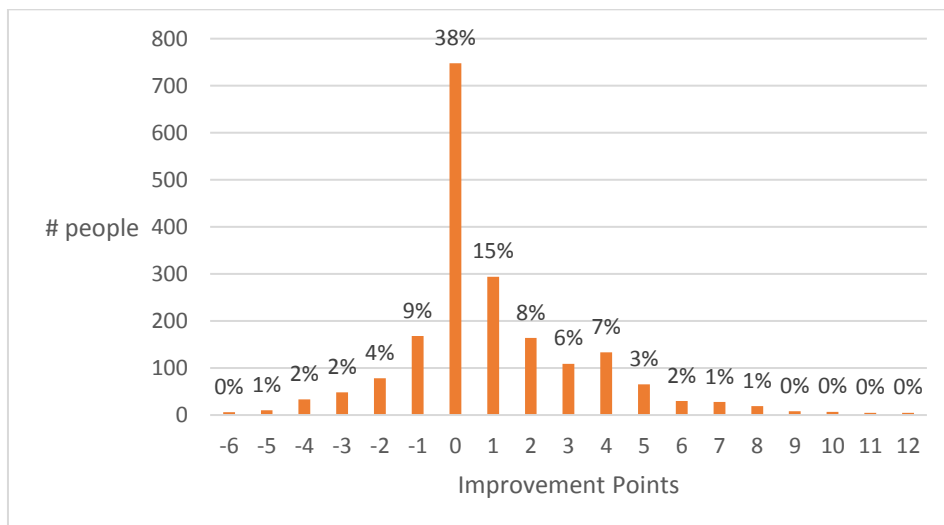


Figure 5 – Overall improvement score for all 1,971 respondents.

Virtual Strand
Key Outcome Finding 2:

The more adults engaged with the numeracy provision, the more they improved their Financial Capability Mindset.

First of all, NN looked at people's progression through the Challenge, and compared this to the change in their attitudes. Figure 6 shows that there is a gradual improvement in attitudes as we move further along the learning journey:

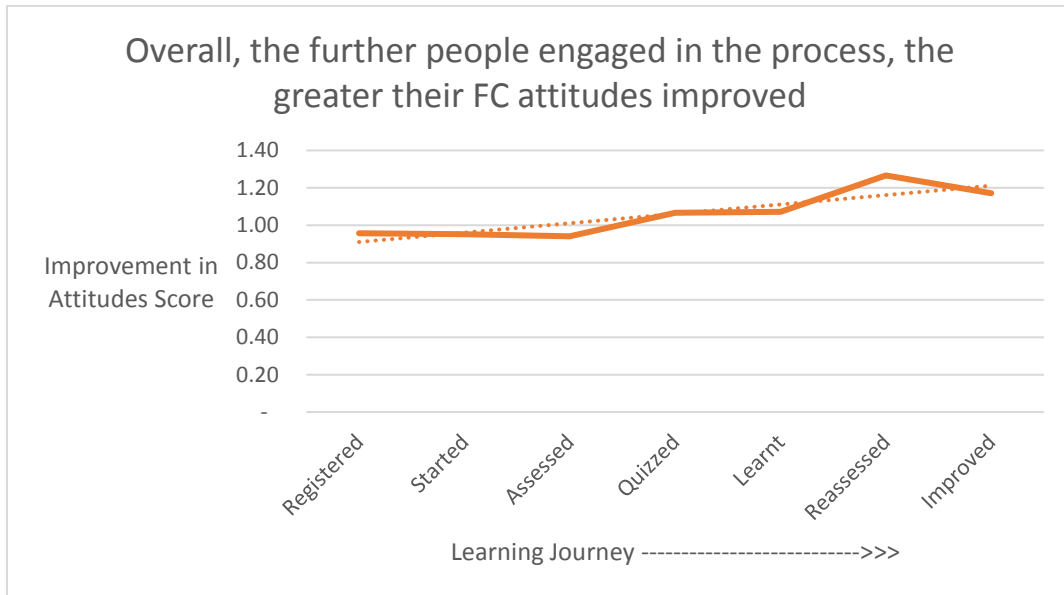


Figure 6 – These results are based on 1,971 registered, 1,957 started, 1,785 assessed, 516 quizzed, 512 learnt, 124 reassessed and 99 improved.

Virtual Strand
Key Outcome Finding 3:

The higher adults' level of numeracy, the better their Financial Capability mindset was likely to be.

Looking at Figure 7 there is a weak positive correlation between people's first attitudinal score (see previous chapter for an explanation of the calculation) and their first numeracy skills assessment score:

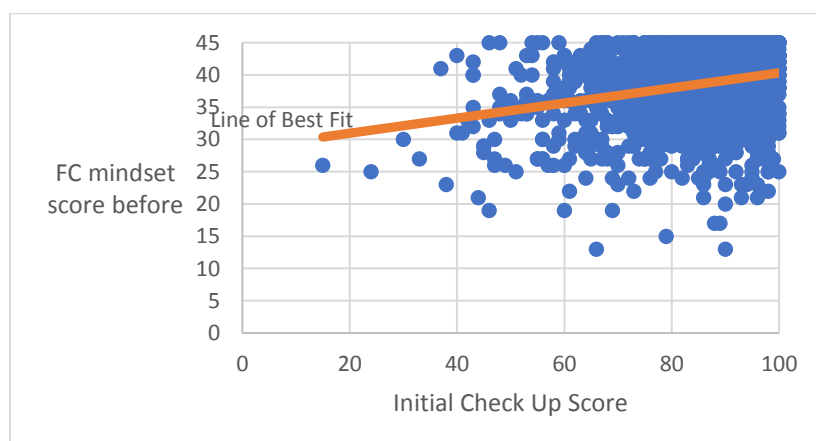


Figure 7 – There was a weak positive correlation between someone's FC mindset and their numeracy.

However, when we look at averages by numeracy level (Figure 8), the trend is much clearer. The higher the numeracy level, the higher the average attitudinal score:

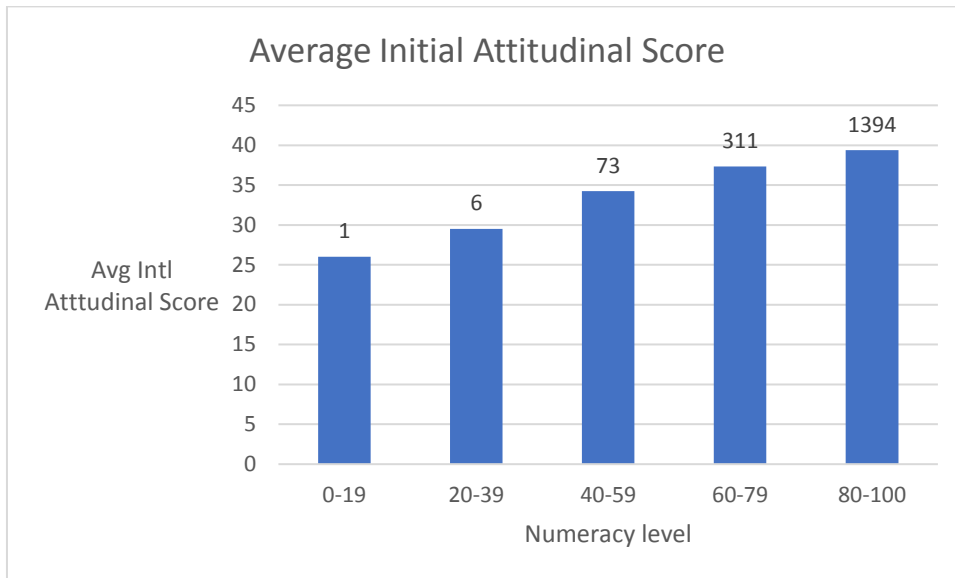


Figure 8 – The figure above each column is the number of people that make up each average score. In total, 1,785 people surveyed had completed a skills assessment.

Virtual Strand Key Outcome Finding 4:	Improvements in numeracy score correlated with improvements in Financial Capability mindset.
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Of the 492 people who improved on their initial numeracy score, 99 answered the survey. NN therefore looked at their attitudinal scores before and after, and compared these to their numeracy scores before and after improvement.

Figure 9 shows that there is a weak positive correlation between people improving their numeracy and improving their Financial Capability mindset:

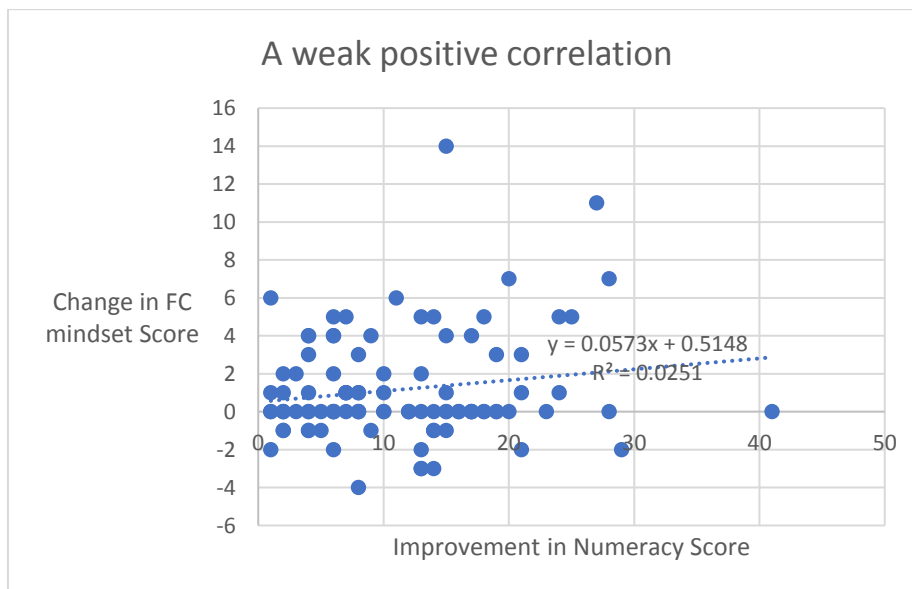


Figure 9 – Comparing numeracy improvement and FC mindset changes. 99 people of the 1,971 (5%) surveyed had improved their numeracy.

Improvements in numeracy

As numeracy in itself is an element of the Financial Capability outcomes framework, NN also looked at the 492 people who improved their numeracy in this strand, regardless of whether they engaged with the post evaluation survey, and found that:

Factor	Trend
Engagement in learning	Those who engaged with learning on the Challenge site were nine times more likely to improve their numeracy.
Numeracy level	Those without the Essentials of Numeracy were up to five times more likely to improve than those who already had the Essentials.
Age	People over 40 years old were up to twice as likely to improve, compared to those 39 and under.
Gender	No identifiable trend.
Geographical region	No identifiable trend.
Activity type (tweet, forum post, campaign email)	No identifiable trend.

NN intends to investigate these findings further outside of this project, using the wider data set from the Challenge.

Qualitative feedback

NN also gave respondents an opportunity to explain how they feel about managing their money and how that might have changed since using the Challenge website. A brief analysis of the responses showed that around 80% of those who chose to comment said that they noticed no change, but 22% of the others did comment on the intervention:

Some said that they couldn't see the link between the numeracy in the Challenge and the skills needed to manage their money effectively (4% of those who commented and noticed a change):	<p>"Any problems I have with managing my money have nothing to do with maths: they're to do with not finding the time to do a boring job."</p> <p>"Have I missed something? I can't see how you've connected my completing the numeracy test and my attitude / ability to manage my personal finances."</p> <p>"I can't see why using the website would change how I manage money. It was just a numerical challenge."</p>
Some acknowledged a change for the better as a result of using the site (5% of those who commented and noticed a change):	<p>"I do pause before making a decision."</p> <p>"It has helped to reinforce some good practice."</p> <p>"It has made me more aware of my spending."</p> <p>"More focused on how I allocate budgets."</p>
Some were pleased that the Challenge had made them aware of the areas of numeracy that they need to brush up on (3% of those who commented and noticed a change):	<p>"I was quite confident with money, but the Challenge made me put into practice some things which I wouldn't do on a regular basis. I re-learned some percentage and tax information."</p> <p>"After using the website and getting the results, I felt a strengthening of resolve that I was doing quite well. I recognised areas that needed some work to improve my understanding."</p> <p>"Doing the Challenge confirmed that in many areas my maths was good, however it did show me that there were some areas to work on."</p>

	“I found the site useful to remind me of things I had forgotten.”
A common comment was that using the site had increased confidence (5% of those who commented and noticed a change):	<p>“I always felt that I was quite good with numbers and completing the assessment online gave me more confidence in my abilities.”</p> <p>“I enjoyed the numeracy Challenge and my high score has given me a lot more confidence in my ability to handle my finances.”</p> <p>“I feel more confident to tackle the bigger questions like retirement and pensions.”</p> <p>“I knew I was ok with maths but the Challenge helped to confirm I was able to use maths effectively and being able to print a certificate to prove it gave me confidence.”</p>
Many enjoyed it even if it didn’t directly lead to an improvement in managing their money (5% of those who commented and noticed a change):	<p>“I have enjoyed upgrading my maths.”</p> <p>“I love the numeracy Challenge and what you guys might achieve in helping adult numeracy.”</p> <p>“It hasn't changed as reflected in my scores but it has emphasised the importance of passing money skills onto our children.”</p>

3.2 Outcome findings from the Delivery Strand

Despite concerted efforts from both NN and Prospects, NN was unable to gather enough outcome data by the end of the project to make a statistically valid evaluation of the outcome for these participants. NN’s key findings were related to the process, the participants’ attitudes, and how to work with a delivery partner to effectively engage this group of adults.

NN managed to collect 184 pre-intervention and 60 post-intervention surveys

Although not statistically significant, the data which was collected seemed to show that participants’ FC mindset had in fact got slightly worse:

#	Question	FC Area	Chi-Squared Result	Overall Sparseness	Interpretation	Strongly Agree %		Strongly Disagree %		% point increase
						Before	After	Before	After	
1	I think my approach to keeping track of income and expenditure works well	self-confidence	0.000094	80%	A change, but data too sparse	27%	13%			-13%
2	I feel confident making decisions about financial products and services	self-confidence	0.000303	80%	A change, but data too sparse	25%	10%			-15%
3	I can always find the time to sort out my finances	attitudes to managing money	0.000303	80%	A change, but data too sparse	25%	10%			-15%
4	It is important to keep track of my household’s income and expenditure	attitudes to managing money	0.000053	80%	A change, but data too sparse	45%	32%			-13%
5	I am disorganised when it comes to managing my money day to day	self-confidence	0.004990	84%	A change, but data too sparse			40%	28%	-12%
6	I feel out of control when it comes to my finances	self-confidence	0.627414	72%	No change			35%	20%	-15%
7	Nothing I do will make much difference to my financial situation	attitudes to managing money	0.063040	80%	No change			23%	17%	-7%
8	I tend to buy things even when I can’t really afford them	self-control	0.000082	84%	A change, but data too sparse			32%	18%	-13%
9	I tend to live for today and let tomorrow take care of itself	self-control	0.010913	84%	A change, but data too sparse			18%	15%	-3%

Figure 10 – Number of respondents to each question is 60. The darker the shade of red, the greater the decline in the most financially capable response to each question. Any apparent anomalies in ‘% point increase’ are due to rounding.

Most of the nine statements showed a shift towards a 'worse' attitude. In the most striking change, the percentage of people who strongly agreed with the statement 'I feel confident making decisions about financial products and services' dropped from 25% to 10%.

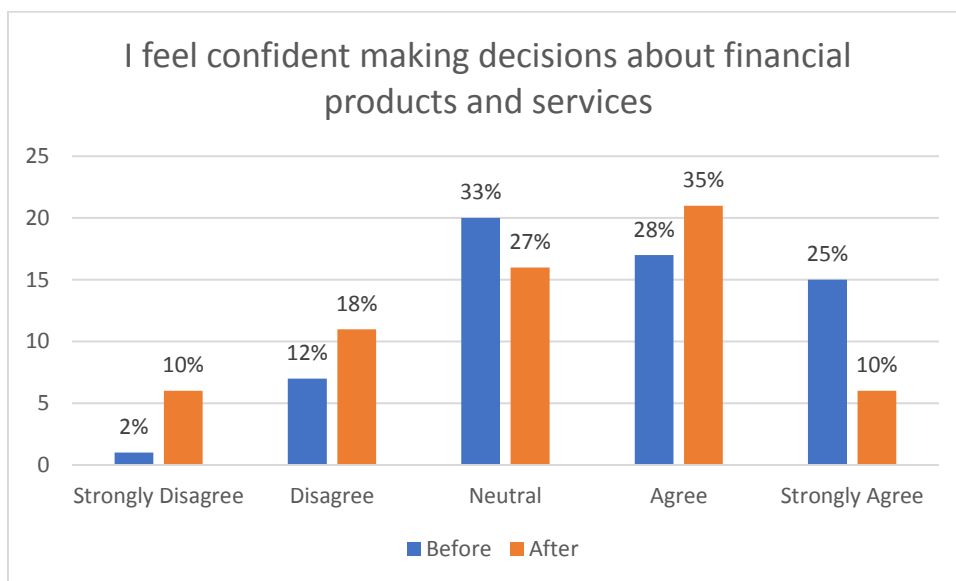


Figure 11 - Number of respondents to each question is 60. This question showed the greatest shift to a less financially capable attitude. Nine fewer people 'strongly agreed' with this statement after registering on the Challenge website. This represents a decrease of 15%.

This could support a theory that less confident adults will initially lose confidence as they reflect on their skills, before their confidence grows in the longer term. If so, it would take a longer intervention and evaluation to assess this. It should also be noted that the people who did respond to the post-evaluation survey were those who had not yet found work over the project period, and were therefore perhaps less likely to have a positive outlook.

NN also found a very slight deterioration in attitudes to improving numeracy (the 28 questions). However, when NN drilled into the six categories that make up the score, a different pattern was found. Although the overall attitude score (out of 100) had decreased slightly, belief (that anyone can improve their numeracy) had greatly improved. Confidence with numbers and self-confidence had also seen slight improvements. See Figure 12 for details. This data could suggest that some people have begun their journey to improving their numeracy.

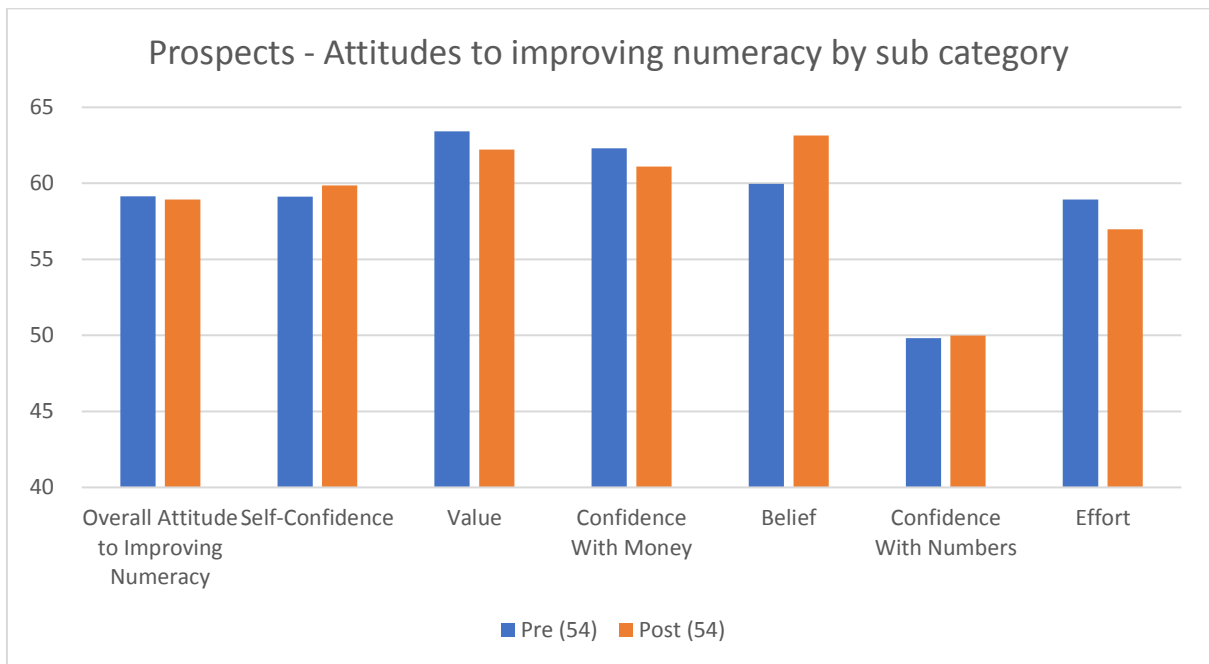


Figure 12: Using the 54 people who answered both the pre- and post-intervention surveys.

However, as the number of responses was far less than is required for a statistically significant result, and with the sparseness of the data invalidating the chi-squared test results, NN is unable to draw any conclusions from these results.

NN also gathered results from the Quick Check. Analysis of the different versions of the Quick Check showed that there were no significant differences between the paper and the digital versions. NN also looked into regional variations, but all regions (except Devon where there wasn't enough data) performed equally.

Analysis shows that Quick Check scores did vary by gender. The average score for females was 3.2, compared to 3.5 for males. A chi-squared result of 0.037842 indicated that this difference is significant.

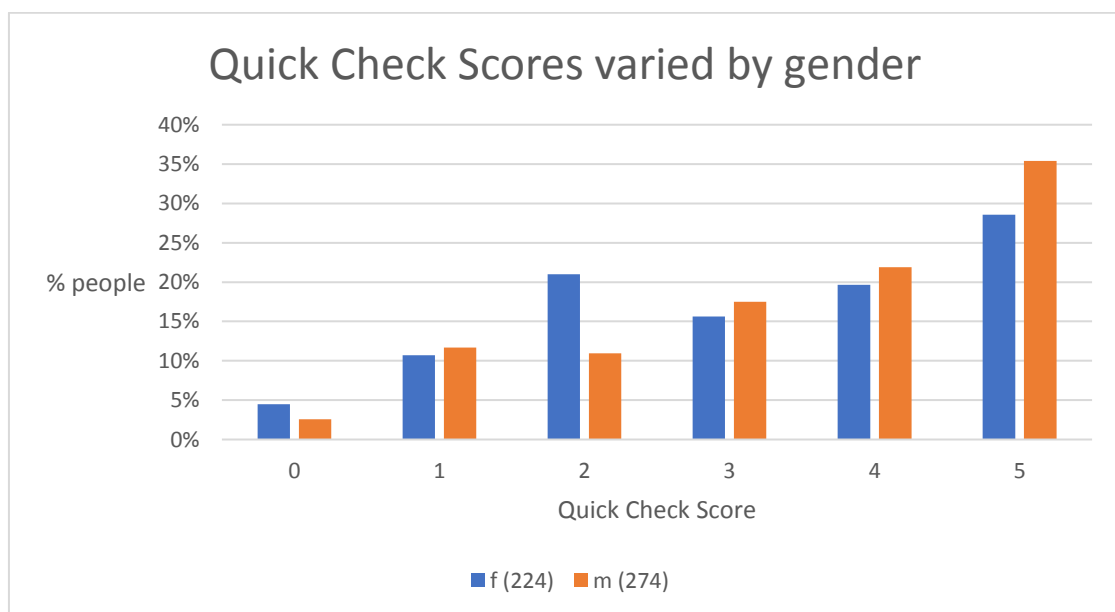


Figure 13: Out of 498 Quick Checks, 45% were from females and 55% from males. The number in brackets is the number of people in each gender.

Improvements in numeracy

As numeracy in itself is an element of the Financial Capability outcomes framework, NN also looked at the 16 who improved their numeracy regardless of whether they engaged with the post evaluation survey, and found that:

Factor	Trend
Engagement in learning	Those who engaged with learning on the Challenge site were seven times more likely to improve
Numeracy level	Those with a skills score of 40 or more were up to three times more likely to improve than those who scored less than 40.
Age	People under 40 were up to three times more likely to improve compared to those 40 and over.
Gender	No identifiable trend.
Geographical region	No identifiable trend.

As with the Virtual Strand, NN will continue to investigate these findings outside of this project.

4. Process evaluation

4.1 Process findings from the Virtual Strand

After the first wave of activity (approximately six weeks, covering most of the activities listed above), NN took stock of the number of adults who had engaged and of the feedback received. This enabled NN to review its approach, change the tone of voice used in its messaging, improve the user experience by removing extraneous paths, and do a better job of setting users' expectations.

In order of numbers of registrations, the most successful activities were:

1. Martin Lewis's forum post (including a follow-up nudge email for those who had engaged but not registered): 10,112.
2. Martin Lewis's tweet: 3,516.
3. Campaign of the Week, in the Tips email (including tweets and Facebook activity): 2,568 the first time and 2,633 the second time.
4. 27 forum posts over seven months: 225 in total.
5. Email invitation to 'Recommend a Friend': 131.
6. Presence on Financial Education web page for one month at end of project: 22.

The most successful activities in terms of numbers of registrations were the ones where Martin Lewis was directly involved. The power of his persona and the MSE brand was clear to see. He was also instrumental in allaying people's initial concerns about the registration process (see later for further discussion). It was also interesting to note how Martin's tone of voice was different to how National Numeracy would normally promote the Challenge. The former's message was one of implied competition 'How good are you? Report your score. I got 98', as well as being more informal with short sentences. Prior to the project, NN's tone would have been less competitive with messages such as 'If you struggle with maths yourself, use our free online tool the National Numeracy Challenge to improve your maths level.'

The activities that saw the greatest visit-to-registration conversion rates – the original Martin Lewis forum post (57%), Quick Test nudge, a follow up from the forum post (71%), and the Martin Lewis tweet (46%) – were all down to the fact that a relationship had been established. With Martin Lewis this is because he was communicating with a group of followers. With the Quick Test nudge, it was because they had already

engaged (via the Martin Lewis Forum post, and the Quick Test), so this was their third engagement with NN. The Quick Test nudge and the Martin Lewis forum post also saw the highest registration-to-assessment conversion rates (78% and 76% respectively). This was also due to multiple engagements.

The Martin Lewis forum post created a lot of food for thought in terms of how to promote the numeracy assessment tool. Mindful of the time-poor audience NN is seeking to engage in what is ultimately a lengthy (and potentially painful) process of assessing their numeracy, NN decided to offer a choice of routes. Martin's post read:

"There's the [quick test](#) which takes a couple of minutes; though far better is the [full National Numeracy Challenge](#) (requires a login). It'll assess you and then provide free courses to improve in areas you're lacking."

The headlines were that:

- Of those who clicked through, 4/5 chose the Quick Test and 1/5 chose the Challenge.
- Each route ultimately resulted in the same number of registrations on the Challenge (once you include the people who were nudged via email after completing the Quick Test).
- The Quick Test route to registration was far more popular with females than males, and was popular with the over 50s.
- The direct registration (Challenge) route was much more popular with the under 50s. There was no gender difference in the people who opted for this.

Whilst NN had no time to conduct a comparison, the closest data it is possible to compare this with is that from the Campaign of the Week. Ultimately the audience is the same (both were included in the Tips email). That said, although the numbers from the Martin Lewis forum post were higher (more prominent and clearly endorsed by Martin), the conversion rates at every stage were higher too, implying that a similar double offering of the Challenge or a Quick Test in the Campaign of the Week slot could have yielded higher registration rates.

Early in NN's work (particularly after the first Campaign of the Week feature), it was clear that the registration process was putting some people off. There were questions raised about why NN needed to collect so much personal information (email address, age, gender, postcode). NN spent quite some time communicating with people (via personal email, forum posts and tweets) that NN was a charity and collecting this data for research purposes. At this point Martin Lewis also helped by tweeting about NN, reinforcing its charitable credentials.

Nevertheless, in the short term NN changed their communications to alert people up front about the registration process, so that it didn't come as a shock when presented with the registration form. To that end, NN had a huge improvement in the visit-to-registration conversion rate. In the first part of the project the rate was 39%; through the improved communications (and possibly NN's now established presence on the MSE forum), this rose to 49% for the last four and a half months of the project. Longer term, NN has decided to slim down the process completely, so that NN will only be gathering the bare minimum of data at every stage. This was implemented in February 2018 - too late to impact this project but NN expects to see an improvement in registration rates going forward.

4.2 Key process findings from the Delivery Partner Strand

NN's main learnings in this strand were around how to initially engage unemployed adults, via a delivery partner, and then retain their interest. This proved extremely challenging, and NN would use what was learned to approach this challenge in a different way in future interventions in similar settings.

Key Process Finding from the Delivery Strand 1:

A paper-based Quick Check tool is effective to quickly triage numeracy levels.

NN initially focused on getting Key Workers to administer the paper-based Quick Check, as NN felt that concentrating on a one-step process had a higher chance of successful implementation than digging too deeply into the longer engagement process which it was hoped claimants would follow. This was initially very successful, as there was a really good rate of engagement with the Quick Check. Across ten weeks from February to April, NN collected 192 Quick Checks from Bournemouth and 155 from Bristol. There were few reports of people refusing to fill it in, and Key Workers felt that it was generally received well. In Bristol they sent out ten Quick Checks in the post to customers who were unable to attend face-to-face meetings, and got eight of them back. Overall, NN estimates that well over 90% of customers in these centres completed a Quick Check.

By comparison, take-up of a digital version of the Quick Check in Cornwall and Somerset was much more limited. Estimations from staff in both regions were that NN would be unable to reach approximately a third of their customers due to either poor IT skills or lack of phone or internet access. To help with this, Prospects organised group sessions in their offices or outreach centres. Mostly these were successful, although there were a handful of occasions where there were IT issues (with both speed and connectivity) which prevented customers from submitting their Quick Check answers.

NN learned that if you engage adults initially with a paper-based Quick Check, it is hard to then get them to switch to digital engagement. It proved more effective to begin with a digital version of the Quick Check when NN wanted participants to continue and take an initial assessment within the Challenge:

	Rates (from the start)					
	Bmth	Bristol	Cornwall	Somerset	Devon	Grand Total
Registered	40%	18%	92%	89%	75%	48%
Started	38%	15%	75%	88%	75%	44%
Assessed	31%	11%	59%	83%	50%	36%
Learnt	13%	7%	32%	18%	25%	15%
Reassessed	5%	2%	14%	8%	13%	6%
Improved	3%	1%	9%	0%	13%	3%

Figure 14: Figures represented as a percentage of the number of Quick Checks. Each row is then conditionally formatted to highlight better (green), average (amber) or worse (red) rates of engagement.

Of course, using a digital version of the Quick Check meant that NN had already filtered out most of those who had no digital access.

Key Process Finding from the Delivery Strand 2:

There are a number of barriers to engaging unemployed adults via a delivery partner, notably attitudes.

Digging into the ‘Attitudes to Improving Numeracy’ data that NN gathered, there are notable differences between Prospects users and the rest of the population NN has gathered data from.

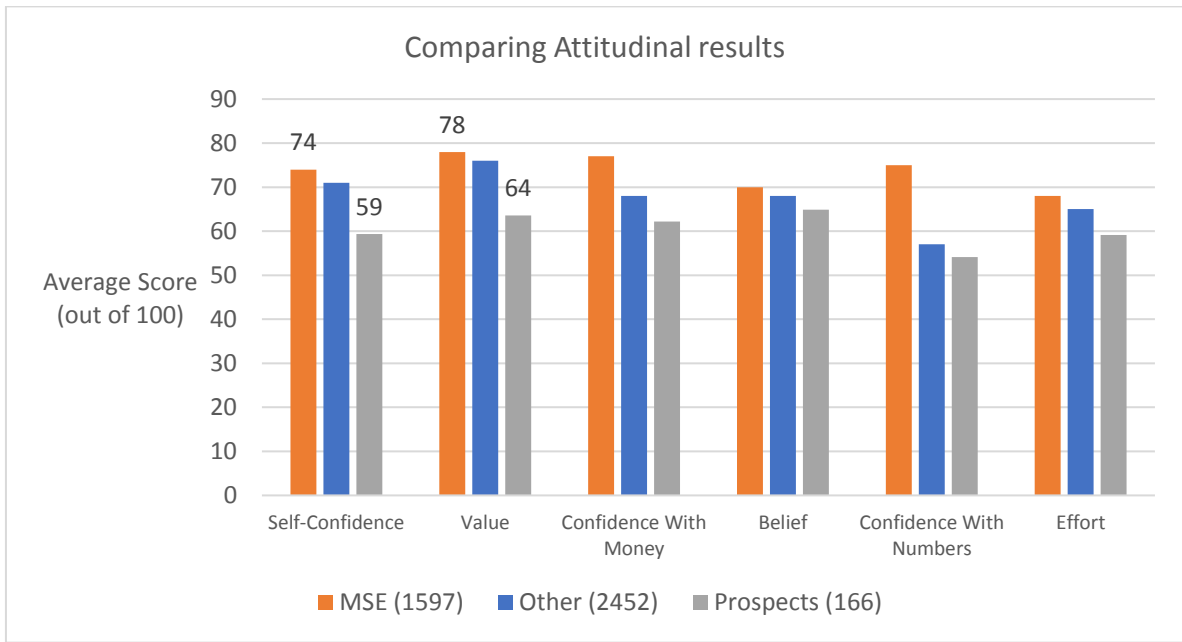


Figure 15: The figures in brackets are the number of people who responded to NN's survey questions.

Most notable of these results for Prospects customers is the distinct drop in 'Value' and 'Self Confidence' when compared with all other users (including MSE). NN therefore looked into the individual questions for further insight. The seven statements across the two factors were:

Self-Confidence	Value
I can usually handle whatever comes my way.	People with good numeracy have more chances to get on in life.
I trust my ability to remain calm when facing difficulties.	You need to be good with numbers even if you have a calculator.
If I am in trouble, I can usually think of a solution.	Being numerate helps you think more clearly.
	Being good with numbers gives people more opportunities in life.

Every question showed a significant difference between Prospects and other populations. Two examples are shown here:

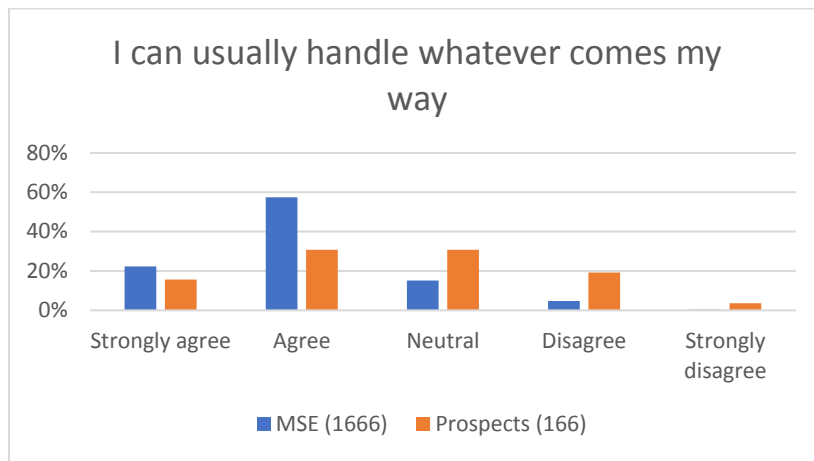


Figure 16: Self Confidence is significantly higher in MSE (and Other) users than in Prospects users

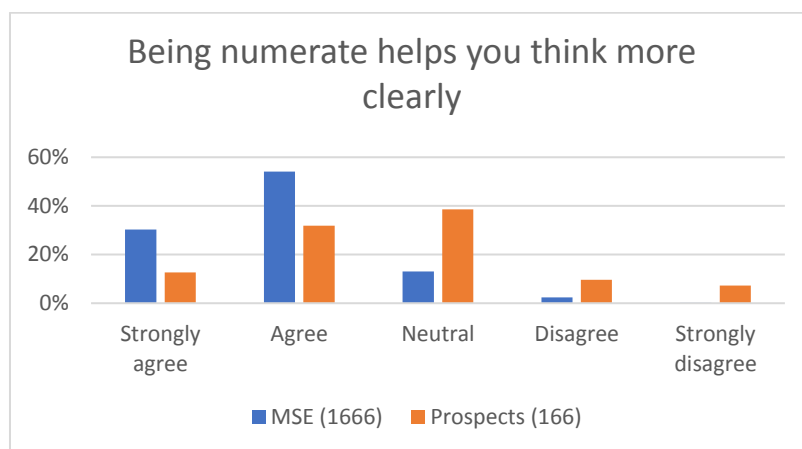


Figure 17: Value is significantly lower in Prospects users than in MSE (and Other) users.

We can therefore infer that lack of appreciation of the value of numeracy in daily life, and a lack of self-confidence are barriers to engagement for this group of adults.

5. Comparison of the two strands

5.1 The population in the Virtual Strand

Developing a good relationship with MoneySavingExpert.com’s team was crucial to the success of this project. By establishing these links, NN was able to reach over 12 million people and engage with tens of thousands of them. Working in this way proved to be a good means of reaching the target audience, and even in this setting of more numerate adults, 36% (4,907 people) of those who engaged showed that they did not have the Essentials of Numeracy, the basic level of numeracy which NN believes is needed to manage your money effectively. By working with the MSE Forum team NN was able to better understand the MSE audience and learnt how and when to communicate with them. This entailed tailoring NN’s messages, providing regular and timely support and advice, both on the forums and via the Challenge support emails. At the end of 2017, the total number of registrations from MSE customers was 19,207, which made up 47% of NN’s total for the year:

	Gender Breakdown			
	Female	Male	Other	PNTS
MSE Users	58%	39%	0%	3%
Other Users	62%	34%	0%	3%

Figure 18: MSE figures based on 19,207 registrations. Other Users based on 21,523 registrations outside of this project. PNTS = 'Prefer not to say'

A slightly higher proportion of males came from the MoneySavingExpert.com site than from NN's usual sources. This is most likely because a lot of NN's other work in 2017 was targeting female-biased professions such as nursing and other healthcare roles. NN has also observed that in colleges, there is usually a higher take-up from females. These figures are broadly in line with MSE's census of users of their website, conducted in September 2017 where the F:M:Other:PNTS split is 57:42:0:1.

	Age Breakdown						PNTS
	Under 16	16-29	30-39	40-49	50-64	Over 65	
MSE Users	0%	9%	21%	20%	32%	15%	3%
Other Users	10%	33%	18%	16%	14%	3%	7%
National	19%	18%	13%	13%	19%	18%	

Figure 19: MSE figures based on 19,207 registrations. Other (not MSE or Prospects) figures based on 21,523 registrations. National figures are collated from Office for National Statistics data. PNTS = 'Prefer not to say'

Again, these figures are broadly in line with MSE's own census from September 2017, although different age categories are used. When comparing MSE users to NN's other work in 2017, the 'under 16' and '16-29' groups were vastly under-represented. This is partly due to the target audiences for some of NN's other work in the education system, and partly down to MSE's demographic, which also explains the over-representation of the '50-64' group. All of these groups are very different when comparing MSE to the national figures. The 'over-65s' group for MSE is much closer to the national figure, and a way off NN's figure, as this is a demographic NN has not attracted thus far.

5.2 The population in the Delivery Partner Strand

NN took time to develop a good working relationship with the teams in the Prospects delivery centres, by attending meetings and workshops, so that NN were confident that Key Workers were committed to trying to engage customers with assessing and improving their numeracy.

	Gender Breakdown			
	Female	Male	Other	PNTS
Prospects Users	45%	52%	1%	2%
Other Users	62%	34%	0%	3%

Figure 20: Prospects figures based on 220 registrations. Other Users based on 21,523 registrations. By Other, we mean neither MSE nor Prospects

A significantly higher proportion of males came from Prospects than from NN's usual sources, and this is broadly reflective of the Quick Check statistics, indicating that the barrier to registering on the Challenge is probably not related to gender.

	Age Breakdown						PNTS
	Under 16	16-29	30-39	40-49	50-64	Over 65	
Prospects Users	1%	26%	17%	19%	32%	2%	5%
Other Users	10%	33%	18%	16%	14%	3%	7%
National	19%	18%	13%	13%	19%	18%	

Figure 21: Prospects figures based on 132 registrations. Other figures based on 21,523 registrations

When comparing Prospects users to NN’s other work in 2017, they are broadly similar. The two areas of difference are ‘under 16s’ (Prospects is for working-age adults only) and ‘50-64’, which is over-represented. This is reflective of Prospects’ usual demographic, and unemployment statistics in general.

5.3 Comparison of numeracy levels

The proportion of MSE users who started and finished their first assessment was significantly higher than for Prospects customers. This increase can possibly be explained by (a) the higher numeracy levels of this population, and (b) the competitive nature of some of the messages which were communicated to customers by MSE (see above). Looking at Prospects, the percentage of starters is much lower (lower numeracy levels, IT issues, no competitive messaging), but the percentage of assessed is high, and on a par with MSE.

This is because of the compulsory nature of the message that was sent out in the latter stages of the project when it was rolled out in to Somerset and Cornwall. The level of engagement through learning and reassessing is similar to the rates that NN commonly sees elsewhere. The improvement rate is then much lower. Far lower levels of engagement in learning and re-assessing are also seen from MSE users.

As expected, numeracy levels amongst MSE users are significantly higher than those of NN’s usual population. It is encouraging, however, that NN managed to engage the 36% of MSE users who did not have The Essentials of Numeracy (i.e. scored less than 80 in their initial assessment), especially as this equates to 4,907 people. The numeracy levels of the Prospects users were significantly lower than both MSE’s and the wider population of other users who have registered on the Challenge.

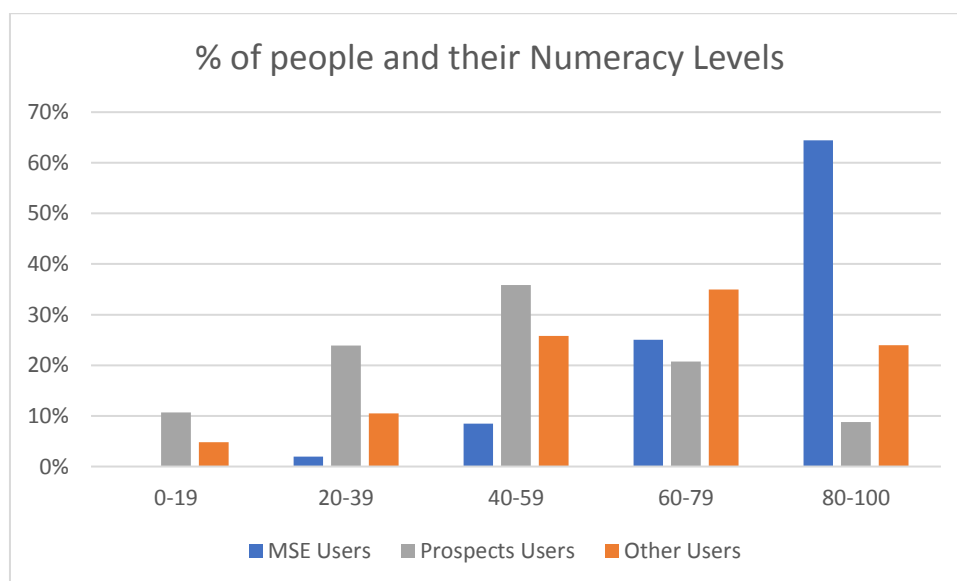


Figure 22: Numeracy levels from Prospects users are much more in line with National Numeracy’s BAU user base. MSE figures based on 13,772 initial Check-Ups. Prospects = 159. Other = 14,335

NN also looked at improvement rates, i.e. the percentage of people who show an improvement having retaken the skills assessment within the Challenge. NN would usually expect between 75-80% of re-takers to improve on their initial score. Indeed, MSE users’ rate was 74%, and Others’ was 81%. The comparable rate from Prospects users was 60%.

5.4 Comparison of attitudes to improving numeracy

As the Attitudinal Quiz was launched in November, NN had limited data to compare MSE and Prospects users. Nevertheless, as NN had incorporated an earlier version of the Quiz in the pre- and post-

intervention surveys for Prospects, it was possible to run some analyses on the attitudes of the two groups, comparing them both to the average user (labelled 'other' in the chart below).

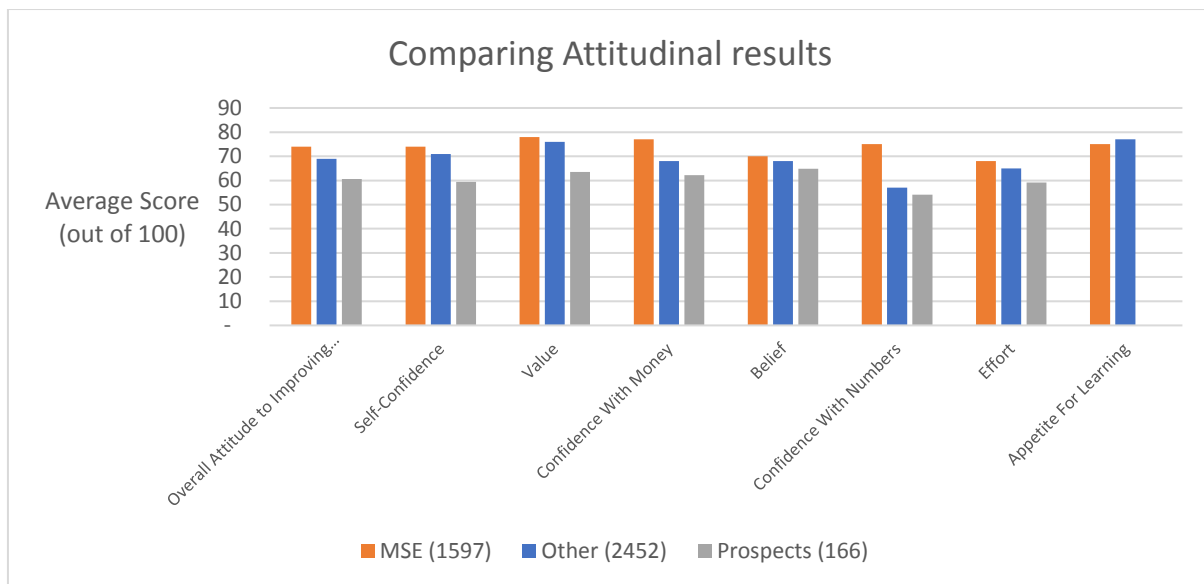


Figure 23: Comparing Attitudinal results. The number in brackets is the number of people who contributed to the results.

Figure 23 shows that in every comparable category, MSE users score more highly than the average user, who in turn score more highly than Prospects users. The only exception to this is 'Appetite for Learning' (not included in the earlier Prospects version) where MSE users score slightly lower. This will be due in no small part to the target audience for some of NN's other work in the education system, where the Appetite for Learning will be much higher. NN has typically found that Appetite for Learning decreases with age, and this is also in keeping with the demographic of the MSE users.

Most notable in these results is relatively high 'Confidence With Numbers' for MSE users compared to all others, which was borne out across all the statements in this section:

- My mind goes blank when I have to do maths
- I tend to avoid situations which involve numbers and data
- When I think about maths, I begin to feel uneasy

MSE users scored significantly higher on all of these statements (i.e. tended to disagree).

6. Limitations of the evaluation and future evaluation

6.1 The Virtual Strand

Limitations - It was a hard decision to set up a post-evaluation only strategy for the Virtual Strand of this project, but it was felt that engagement would be greatly affected by asking people survey questions up front. The approach of only surveying those who had engaged with NN also meant that there was no control group.

Learnings - It is hard to see how the latter could be addressed. However, the willingness of participants to engage with NN once signed up (for example, 40% of survey respondents were willing to be interviewed) suggests that a pre- and post-intervention survey may in fact be possible and therefore lead to even more robust evaluation findings.

6.2 The Delivery Partner Strand

Limitations - By far and away the single biggest issue was the difficulty in securing engagement from beneficiaries. Out of 184 people who completed a pre-intervention survey, NN collected 60 post-intervention surveys. NN needed at least 125 responses for a confidence level of 95% and a 5% margin of error, and 64 for a confidence level of 95% and a 10% margin of error. Even then, we need to appreciate that this group is self-selecting in both surveys. All of NN's work with potential beneficiaries was via an intermediary, i.e. a Prospects Key Worker. Whilst this approach was absolutely right (they have the relationship with the customer already established), it made it nigh on impossible to gather data post-intervention without the help of the Prospects staff.

Throughout November NN contacted people via MailChimp to ask them to complete the (digital) post-evaluation survey. Initially NN included no incentive and received two responses (out of 184), so after four attempts it was decided to include a financial incentive; namely complete the survey and be entered into a draw for £100 of vouchers. When that generated zero responses, NN changed the offer to 'complete the survey and get £20'. NN received a further eight responses (out of 182). In December NN changed tack slightly, removing the incentive, but sending the email from an internal work email address and personalising the email, using the participant's name and month of initial engagement. This approach garnered a further nine responses. In early January, NN enlisted the help of Prospects staff, who agreed to help collect more responses. The staff gathered 41 responses (24 from a paper-based version, 11 from phone calls to customers, and six from on-line sessions).

	#emails	#responses
November '17 (mailshot – some incentives)	7	10
December '17 (personal email - no incentives)	5	9
January / February '18 (branch help)	n/a	41

Figure 24: Financial incentives made no more difference than a more personal email. What did work was enlisting the help of the Prospects staff, and again providing a range of channels through which a customer can engage.

In Bristol, a member of staff was dedicated to NN's work, and with the help of other staff managed to get 156 Quick Checks. They also organised sending out Quick Checks in the post and group sessions for customers to come into Prospects and use the IT facilities to register on the Challenge and complete an assessment. Unfortunately, this person was on a temporary contract which was not renewed, and the numbers very quickly tailed off. After a well-received introduction in Cornwall and Somerset in June, numbers were very slow to come in as both regions' attention turned to dealing with other matters. There were staff shortages in Cornwall and an audit process in Somerset. Significant numbers of Quick Checks did not start coming in until late August in Somerset, and mid-September in Cornwall.

A common theme throughout the project was also issues with IT. Staff and customers complained of the speed and access of the computer systems, making the digital intervention work even harder. Data coming back from Prospects customers highlighted several issues. These included:

- People often had multiple email addresses, and this made it difficult to tie different data sources together. Others either had no email address, or used a friend or relation's, again making it difficult to connect data.
- Whilst typos are an occupational hazard in any data collection, the occurrence of mistakes or unclear handwriting was much higher than usual.
- The level of general disengagement (not necessarily with numeracy) was quite clear, with three post-evaluation surveys returned with 'Neutral' for every response, followed by 'Leave me alone' in the additional comments section.
- On more than one occasion, people completed a pre-evaluation survey instead of a post-evaluation survey.

- Some people did a post-evaluation survey without having completed a pre-evaluation survey.
- Several people completed either a pre- or post-evaluation survey twice.

Learnings - In future evaluations NN would strongly recommend minimising the number of engagements with any beneficiaries in this setting, and to collect as much data during the few engagements which do take place.

7. Implications and recommendations for policy and practice

7.1 Recommendations

As a result of the findings from this project, National Numeracy makes two key recommendations:

1. **Numeracy resources should form an integral part of all online provision to support adults with managing their money or debt, so that individuals are able to benchmark their current everyday maths skills and attitudes, and then work towards improvement.**
2. **Within face-to-face support for low-skills or unemployed adults, a paper-based Quick Check tool should be used to identify which adults will benefit from making improvements to their functional numeracy skills, followed up with attitudinal support where necessary, prior to engagement with skills training.**

7.2 Rationale and other findings

Recommendation 1

Previous research has already shown that numeracy is an essential component of sound financial capability. This project has now also shown that:

1. People improved their Financial Capability Mindset as a result of engaging with National Numeracy's provision.
2. The more adults engaged with the numeracy provision, the more they improved their Financial Capability Mindset.
3. The higher an adult's level of numeracy, the better their Financial Capability Mindset was likely to be.
4. Improvements in numeracy score correlated with improvements in Financial Capability Mindset.

Hence, there is evidence that Recommendation 1 will work, and can help many more adults to improve their financial capability. NN has found that people are more likely to engage with improving their numeracy skills if they are engaged via a route which clearly shows the *value* of numeracy in daily life. Money management is a powerful way to do this, as it is one of the most compelling reasons for adults to improve their everyday maths skills. As part of offering numeracy provision within online information for managing finances, NN suggests from the experiences within this project that:

- The numeracy provision is fully supported by the trusted brand offering the financial support, and does not just appear as sign-posting to a third party. The numeracy component should form a cohesive and visible part of information provided around money management. A multi-channel communications plan should be used to engage adults with their numeracy, including appropriate levels of newsletters, social media, campaign mailshots, and forum activity, as well as static onsite content.
- The interface to numeracy provision should be as quick, simple and unintrusive as possible, in order to maximise engagement.

Recommendation 2

This project showed that this is an effective way to quickly triage the numeracy levels of adults, and provide a reliable means on which to base referrals for training, rather than reliance on questioning customers about past qualifications. There is currently no consistent process in place in Jobcentre Plus or in other employment services to do this. A paper-based Quick Check tool can be used in all settings, whether there is digital access or not, and can easily be administered by staff. This will put some science behind decisions on who should be referred for numeracy training, and who can focus on other aspects of getting ready for employment.

As part of using a paper-based Quick Check tool within support for unemployed adults, NN suggests from the experiences within this project that:

- Those adults who it is identified will benefit from improving their skills should first engage with attitudinal support to ensure that they begin to see the value of numeracy in daily life and their search for employment, and to increase their self-confidence before they tackle skills training. This will improve the likelihood of them engaging and improving their skills.
- If an organisation has the infrastructure to support digital engagement, and offer claimants the means of improving their skills themselves online, then it may be better to administer the Quick Check digitally rather than on paper, as it can be difficult to later make the jump from paper to digital.

7.3 Suggested further research

Subject to available funding, NN would like to:

- Continue evaluation of the adults who engaged with the project via the Virtual Strand, and extend this approach, including use of the Challenge, to reach customers of Money Advice Service and other online money management and debt advice providers.
- Take the learnings from the Delivery Partner Strand and implement an improved intervention in Prospects and in selected Jobcentres. As part of this, NN would:
 - Identify the key attitudinal questions which can be asked as part of a Quick Check, to identify the likelihood of the participant engaging with skills provision which is offered.
 - Test and then use an expanded ten question Quick Check tool.
 - Use a paper-based Quick Check in settings with no digital infrastructure, but a digital version where there are facilities for customers to proceed to digital assessment.
 - Use the Train the Trainer attitudinal materials NN has developed for use in the health sector to help delivery staff support customers with addressing attitudinal barriers.

8. Sharing and Learning Activity

National Numeracy is excited about the findings from this project and is keen to share these as widely as possible beyond the report being hosted on the Financial Capability Evidence Hub. Once the evaluation report is signed-off by all parties (including MoneySavingExpert.com and Prospects), NN plans to:

- Work with MAS to develop a joint press release announcing the findings. This may take the form of two releases: one aimed at online financial capability providers, and one directed at providers for unemployed adults.
- Launch a section explaining the findings on the National Numeracy website.
- Share findings with National Numeracy's trustees and run a sharing session with the full NN team.
- Incorporate the findings into all of NN's future work with providers of financial capability and those who support the unemployed.