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STAGE 1 REPORT

PROJECT TITLE:	**Dundee Bairns Tea Club**

Scottish Government
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Executive Summary

The Bairns Tea Club (a homework and hot meal after-school 10-week intervention) was piloted in five primary schools in the North East Ward of Dundee City. An area identified as having more diverse attainment challenges and having no pupils in the 30% least deprived data zones (DCC, 2015). The project's key objective was to examine whether the Bairns' Tea Club could impact on attainment, health and wellbeing for those children identified as living with food poverty. Parental engagement with the tea club was also an ambition, in the knowledge that parental involvement in schooling leads to better outcomes for the children (Rouse & Ware, 2017).

Pupils and/or families were referred to the project by the headteacher of each of the five schools. Input in relation to the relevance of a referral was provided by School Family Support and Development workers. The nature of the parent-pupil-school relationships varied between schools and led to three different intervention models being adopted:-

1. Child only for homework and hot meal
2. Child only for homework, family for hot meal
3. Family for homework and hot meal

Sixty pupils participated in the Tea Club and 108 similarly-aged pupils from their schools acted as a control group. The Tea Club intervention led to a significant improvement in literacy and numeracy measures for those pupils in attendance. There were however, more mixed findings in relation to health and wellbeing. The growth in stature was greater for the children attending the club (though these children were significantly shorter pre-intervention) but there were lesser changes in other measures of fitness. Most health and wellbeing indices had some non-significant improvement.

The level of self-reported school absence was significantly higher in Tea Club participants when compared to the control group pre-intervention and significantly improved post-intervention. Tea Club members had significantly higher rates of happiness when compared to control subjects at the end of the project. Teachers, parents and pupils reported increased pupil confidence as a consequence of engagement with the Tea Club. Enhanced relationships were also reported by all stakeholders and attributed to increased family time playing, learning and eating together as well as the building of bonds with children, parents and teachers.

The small numbers of consistent attenders at the Tea Club (n=26) meant that it was difficult to examine whether any one intervention model had had a greater impact on the research findings. Quality time as a family emerged as a predominant theme in pupil, parent and teacher narratives. Parents who engaged with the homework element note their increased confidence in supporting their child's learning.

Recommendations

- The findings would benefit from wider dissemination, including to policy makers.
- Further investment in research (for example, from Scottish Government's Fair Food Funds) would enable more pupils/schools to be recruited to an expanded project with a longer intervention period (minimally one school year) with consideration given to sustainability.
- A standardised approach should be adopted for recruitment, measurement (eg. use of Scottish Survey of Literacy and Numeracy (SSLN) attainment data) and model of delivery (ideally with parent involvement), and there should be consideration of how Pupil Equity Funds can support Tea Club activities.
- A project officer should be appointed to co-ordinate all aspects of the project including family follow-up, multi-agency liaison and engagement with Tayside Contracts regarding the menus and monitoring of food consumption.
- Clubs should segregate activities for older and younger pupils and consider family cooking sessions as an additional activity.

- Establish a citywide food poverty forum to share resources/outcomes with other family-oriented projects.

Introduction

There is increasing concern regarding the growing attainment gap within schools linked to poverty (McKinney, 2014; DCC, 2015; JRF, 2014). Children from low income households are noted to have lower levels of vocabulary and problem-solving and by the age of 5 have a 10-13 month gap in abilities when compared with children from high income homes (JRF, 2014). This gap can grow wider as the child progresses through the school system increasing the likelihood of the child leaving school earlier with fewer employment opportunities. Regular monitoring of the impact of poverty on national qualifications exam performance and post-compulsory schooling occurs but less data exists regarding the effects on numeracy and literacy achievements in the early school years (Audit Scotland, 2014). The information that does exist demonstrates that from P4 onward the attainment gap for numeracy and literacy widens when comparing those from low income households with their peers. For numeracy, children from higher incomes homes were twice as likely to be considered to be performing well; for reading, children from lower income homes had a 17, 14 and 16 percentage point difference in scores at P4, P7 and S2; with the attainment gap being even wider for writing – 21 percentage point difference across all stages (JRF, 2014).

There are concerns that these attainment challenges are exacerbated by rising levels of food poverty. Teachers report that children experiencing hunger are less able to concentrate, negatively affecting pupil behaviour, awareness and attainment in the classroom (ATL, 2016). Mental and physical health is also affected (ATL, 2016). The summer vacation period is known to intensify differences in pupil outcomes for those living in poorer households (Defeyter, Graham & Prince, 2015; APPG, 2014; Kelloggs/YouGov, 2015; Paechter et al, 2015). The child food poverty policy adviser, Lindsay Graham, has been a key influencer in raising awareness of the issue and also championing projects which aim to tackle this inequality (Graham, 2014). A School Holidays (Meals and Activities) Bill was tendered in the House of Commons in January 2018. While the outcome did not lead to legislative requirements for local authorities, the impact of interventions will be investigated through access to research funding (Graham, 2018) akin to the Fair Food Fund of £1million launched by Scottish Government in 2016.

The Rank Foundation introduced a Fun and Food programme in Dundee to complement existing activity in the summer of 2016 cognisant of the poverty challenges faced by a number of the city's families during vacation periods. The non-availability of free school meals is known to place additional financial burden in covering this expense (APPG, 2014). The charity partnered with Tayside Contracts to provide a hot lunchtime meal to pupils attending out-of-school holiday clubs in specific geographic locations within Dundee (ie.proximal to schools with high enrolments of pupil from Scotland's most deprived postcodes (SIMD20) and/or with high levels of entitlement to free school meals (FSM)). This summer pilot resulted in an extension of the project to the October and Easter school vacation periods in the 2016-17 academic session and served as a primer for the current Dundee Bairns Tea Club project. A meal and homework club has been running in Glasgow once a week since 2014 (the Thriving Places Family Meal and Homework Club). The benefits of such an intervention extend beyond learning and access to nutritious food but also foster positive relationships, trust, family fun and increase parental involvement with the school (McLaren, 2016).

The social problems that the Bairns Tea Club project served to address, were primarily closure of the attainment gap and the provision of hot nutritious meals to children living in relative poverty. The purpose of the homework club element was to enable children to achieve their full education potential. Parental engagement with the tea club was also an objective, recognising that parent involvement in schooling leads to better outcomes for the children (Rouse & Ware, 2017). Through the provision of regular sport and leisure activities, along with a nutritious evening meal, within the five pilot schools in the north east ward of Dundee, the project aimed to improve the health and

wellbeing of children living and growing up with poverty and hardship, while also developing their literacy and numeracy skills.

The project addressed the statutory targets set out in The Scottish Child Poverty Bill which aims to reduce the impact of child poverty by 2030. Scotland's current figures show that 260,000 children (including 28% of children in Dundee City) live in poverty (DCC, 2015). Dundee's statistic is the second highest level in the whole of Scotland. However, there is an expectation that these statistics will worsen with the Institute for Fiscal Studies (IFS, 2016) predicting that child poverty is set to increase from 15.1% in 2015/16 to 18.3% in 2020/21.

While there had been anecdotal reports of the positive impact of Dundee's Fun and Food project no robust evidence had been provided to support these claims. Abertay University had been involved from the outset by recruiting student volunteers to support the delivery of the Fun and Food project. The launch of the Dundee Bairns Tea Club enabled the employment of a research fellow to gather quantitative and qualitative data that could evidence the impact of the homework and hot meal after school intervention.

Research Questions

1. Can a 10-week homework and hot meal intervention have an impact on measures of numeracy and literacy in primary school age children?
2. Can a 10-week homework and hot meal intervention have an impact on measures of health and wellbeing in primary school age children?
3. What are the children's perceptions of the impact of their engagement with Dundee Bairns' Tea Club?
4. What are the parents' perceptions of the impact of pupil engagement with Dundee Bairns' Tea Club?
5. What are the teachers' perceptions of the impact of pupil engagement with Dundee Bairns' Tea Club?

Methodology

Recruitment

The five primary schools (A-E) that became host venues for the pilot project were all located in the North East Ward of the City. An area identified as having more diverse attainment challenges (the lowest proportion of leavers (67.7%) attaining literacy and numeracy levels at SCQF level 4 or above) and no pupils in the 30% least deprived data zones (DCC, 2015). Pupils and/or families were referred to the project by the Headteacher of each of the 5 schools. Input in relation to the relevance of a referral was provided by School Family Support and Development workers, who were best placed to determine which families and children would benefit most from the services offered through the Bairns Tea Club.

Table 1. Tea Club recruitment strategies used by different schools

School	Parent/family involvement	Academic need	Health & fitness need	Chaotic lifestyle
A	Meal	Yes	Yes	No
B	Meal	Yes	Yes	No
C	Meal	Yes	Yes	No
D	None	Yes	No	Yes
E	Club & meal	Yes	No	Yes

Although the main aim of the Tea Club was to reduce the poverty associated attainment gap, by providing teacher-supported homework sessions and a hot family meal, schools differently

prioritised the specific needs of their children and families. Schools A and B targeted children in need of support in numeracy, literacy, wellbeing and exercise, inviting them to attend only on specific days when the appropriate activity was running. Schools C, D and E had many children attending on multiple days. School D had no parent/carer involvement, schools A, B and C had parents and families participating in the meal and school E had parents and preschool siblings participating in the club activities and meals (Table 1). The original model proposed for the Tea Club suggested parents/carers accompany their children to the homework club and the meal. By working alongside their children in the club, it was hoped adults would improve their own literacy, numeracy and fitness, and this would enable them to better support their children with homework and being active out with school. However, only school E adopted this model. Schools targeted participants using different strategies. Schools were responsible for staffing and running the homework clubs within their venues and for recruitment of children to the clubs. Active Schools provided Monday and Friday sports sessions.

Intervention

Consequently, there were three intervention models:-
1. Child only for homework and hot meal
2. Child only for homework, family for hot meal
3. Family for homework and hot meal

The homework club ran for 10 weeks between January and March offering different activities each weekday. On Mondays and Fridays, various sports activities were run by Active Schools' instructors, and Tuesday, Wednesday and Thursday sessions were facilitated by teachers and support assistants from the respective schools (Table 2).

Table 2. Homework club activities

Monday	Tuesday	Wednesday	Thursday	Friday
Sports	Numeracy	Literacy	Health & Wellbeing	Sports

Nutrition Intervention

The menu followed a three week cycle and offered a choice of standard or vegetarian option each day. A main course was served, accompanied on alternate days by soup or dessert.

Table 3. Example of one week menu for Tea Club

WEEK 1	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
Soup		Cream of Tomato Soup		Lentil Soup	
Main Course	Steak Pie or Minced Quorn Pie	Chicken Pasta Bake or Baked Potato & Beans	Traditional or Quorn Mince	Beef or Vegetarian Lasagne	Corned Beef Stovies or Macaroni Cheese
	Roast Potaotes	Peas	Creamed Potatoes	Garlic Bread	Baked Beans/Peas
	Veg Medley	Salad	Sliced Carrots	Salad	Chips
Dessert	Selection of Muffin		Selection of Yoghurts		Carrot Cake & Custard
Drink Option	Milk or Water	Milk or Water	Milk or Water	Milk or Water	Milk or Water

Consent

Permissions to work in participating schools were already in place. Standard parent/carer participant information forms (Appendix 1) were produced for distribution by the schools, explaining that the project had ethical approval from the Research Ethics Committee at Abertay University. Children's participation was voluntary and many of the planned measurements aligned with health and well-being projects that the children were already completing. An opt-out recruitment strategy was used, recognising the proposed activities were typical of those undertaken in school. Therefore, parents/carers only needed to return the consent form if they did not agree to their child's participation.

The researcher explained the activities and discussed the assent form (Appendix 2) with the child before commencing the study (the legal age of capacity in Scotland is 16 years; children cannot give informed consent but can assent to participation in the research). The researcher ensured the child understood participation was voluntary and they could withdraw at any time with no penalty. 201 participants (114 females, 87 males) were recruited from the five participating schools. All data was coded for anonymity and securely stored.

Control Group

All Primary 6 children (age 10-11 years) from four of the schools were invited to participate in the health and wellbeing activities as these complemented the current health and fitness curricular topic work in these schools. Many of the homework club participants were Primary 6 pupils, therefore a control group of 108 participants was established (60 females, 48 males).

Tea Club Participants

Sixty Tea Club participants, aged between 5 and 12 years (36 females, 24 males) were recruited to the study. Attendance at the Tea Club was variable (Table 7), some families stopped engaging with the club while new families joined part way through. Due to these new recruits, numbers participating in the homework club were similar at the beginning and end of the project, but only participants for whom there were pre- and post-intervention data were included in the analysis. As the control group were aged 10-11 years, the health and wellbeing analysis was also restricted to this age group, resulting in 26 participants' (18 females, 8 males) data being considered.

Procedure

The literacy and numeracy tasks were completed during the homework club. The researchers visited the literacy and numeracy clubs at schools A, B and C, to carry out simple age-appropriate literacy and numeracy measures. The other two schools chose to conduct their own measures of literacy and numeracy and later share their results with the research team.

Numeracy

Numeracy assessment procedure (schools A-C)

Numeracy was assessed using a subset of tests from the Wechsler Intelligence Scale for Children (WISC-IV) (Wechsler, 2003), a reliable and commonly used method of numeracy assessment with children (Kaufman, et al. 2006). Timed testing is known to influence performance on numeracy tasks (Tsui & Mazzocco, 2007) so was included. The WISC digit-recall-digits forward test assesses auditory short-term memory, the digit-recall-digits backward tests auditory working memory (Appendix 3), and the WISC block design task (Appendix 4) measures perceptual reasoning, spatial processing and visual-motor integration. The timed test activity was a generic version of the Perfection shape matching game.

WISC digit recall - digits forward
Participants were asked to listen carefully to a string of numbers and repeat these back to the researcher exactly as the researcher had read them. The task began with strings of three numbers, each category extending the string by one, with the most difficult category, strings of nine numbers. Each number string comprised different numbers, with each string length presented twice. If a participant responded correctly, they moved to the next string. After making two consecutive errors, the participant was thanked for their efforts and moved onto the digits backward task.

WISC digit recall – digits backward
The procedure for the digits backward task was similar to the digits forward task except that participants were asked to repeat the number strings back in reverse order to what they heard. The digits backward strings began with strings of two numbers and increased incrementally to strings of eight numbers.

WISC block task
Participants were presented with red and white blocks and asked to reproduce a design presented in a stimuli book. The first design comprised two blocks laid side by side, with their red side showing. The second design was also a variation of two blocks, then the third to eighth used four blocks. Designs 9-13, used all nine blocks in the set. Designs became increasingly difficult and participants, for the first four designs, were scored on whether they correctly replicated the design on their first (2 points) or second attempt (1 point), or not at all (0 points). For the subsequent four designs, the score was dependent on time taken to reproduce the design (1-10 sec =7 points, 11-15 sec = 6 points, 16-20 sec = 5 points, 21-60 sec = 4 points). For the most challenging designs, a maximum of two minutes was allowed to complete the task, with the time taken divided into four categories to match scoring of earlier tasks.

Timed shape game
Participants were presented with a grid into which 25 shapes could be fitted. The grid had a mechanical timer which was set to the maximum 60 second setting. Once started, the timer constantly ticked as it counted down and children had to correctly place as many shapes as possible into the grid. At the end of the allowed time, the grid popped up and the shapes were expelled.

Numeracy assessment procedure (schools D & E)

School D - Multiplication table tests
Participants at School D completed weekly multiplication tests and results at the conclusion of the project were compared to starting scores.

Sumdog (School E)
The Sumdog programme (Learning Works For Kids, 2018) is an interactive package for school and home use. It is widely used in schools and is believed to accelerate progress in numeracy (Le Mar, 2016). By assessing a child's current ability, it can adapt the material presented to be suitably challenging for the individual and also enable children of multiple abilities to play games against each other. The levels it works with are:
0 – Early Level (up to P1 expected levels.)
1 – First Level (P2, P3 and achieving this level by end of P4)
2 – Second Level (P5, P6 and achieving level by the end of P7)

The figures after the decimal point indicate how far through a level a child is. It is expected that a child progress their score by 0.33 per year. The schools using Sumdog provided a spreadsheet to the

researcher indicating the child attending the Tea Club's score at the beginning and end of the intervention.

Literacy

Literacy assessment procedure (schools A-C)

Literacy web

To assess literacy, a literacy concept web (Stahl & Bravo, 2010) was used enabling children's current vocabulary to be assessed. Children were asked to list as many words as possible in a 10 minute time frame. Participants were given a grid (Appendix 5) and asked to write down all the words they could think of related to certain food categories (foods liked and disliked, colourful foods, drinks). It was stressed that spelling was not important, rather, it was the number of words generated that was of interest. The measure was conducted in the first and the final weeks of the Tea Club to allow comparisons of participants' performance.

Lexia (school E)

Lexia (Lexia UK, 2018) is a phonics based programme to support children's literacy journey and is split into core stages, each with several levels to complete. It enables teachers to observe the progress made by each child and match this with age-related norms. Children can access Lexia at school and at home. School E provided a spreadsheet to the researcher indicating the scores of Tea Club attenders at the beginning and end of the intervention.

(School D opted not to assess literacy).

Health and wellbeing

Health and wellbeing procedure (schools A-E)

A standardised battery of tests were used to measure children's physical health and fitness (Safrit, 1990). These included measures of power, strength and suppleness (standing long jump, hand grip strength, sit and reach) as well as recordings of blood pressure, pulse, peak expiratory flow, and body mass index (Appendix 6).

Primary 6 class visits took place on a suitable afternoon during normal school time and the Tea Club visits were conducted to coincide with the Health and Wellbeing homework clubs. Before beginning the study session, the researcher introduced herself and explained the planned activities. The children were informed that participation was voluntary and they may stop at any time, with no penalty. Stations were set up around the class and children visited these in rotation, beginning with blood pressure assessment. Measures were taken at the beginning and end of the Tea Club project. Children received a booklet in which to record their pre- and post-measures so they could see if their fitness had changed.

1. *Blood pressure measurement and pulse*

Blood pressure was recorded using a digital sphygmomanometer fitted with a paediatric cuff and used to calculate mean arterial pressure (MAP) (Haque & Zarisky, 2007). The child sat with their elbow resting on a desk surface to avoid body movement. The machine was activated by pressing a button and the cuff inflated then deflated, providing an automated reading of blood pressure and pulse rate. Blood pressure and pulse were measured before undertaking any of the physical activities.

2. *Peak flow readings for lung function*

Whilst standing the pupils were asked to take as big and as deep a breath as possible, then seal their lips firmly round the cardboard tubing of the spirometer and blow the air in their lungs out as hard and as fast as they could, until they feel they can empty their lungs no more. The child's best result from 3 attempts was recorded.

3. *Height and weight*
The child's height and weight was measured then used by the researcher to calculate BMI. School E requested no weight measurements to be taken.
4. *Standing Long Jump*
Pupils were asked to place toes, with feet apart on the indicated line, and then by swinging the arms forward, jump as far forward as is possible. The distance jumped was measured, with the best of 3 attempts was recorded.
5. *Hand Grip Strength*
The dynamometer handgrip size was adjusted, so that the child's middle knuckles sat flat on the bar. The child then held the dynamometer by their side, and when switched on, squeezed the grip bar as hard as is possible, using one hand only. The handgrip strength was measured, with the best of 3 attempts recorded for each hand allowing at least 30 seconds before repeating an attempt on the same hand.
6. *Sit and Reach Test*
The children were asked to place shoeless feet flat against the backboard of the sit-and-reach box, and leaning forward from the waist (with legs straight), push the rod as far forward as possible. If pupils failed to reach the rod, they obtained a negative score and a tape measure was used to see how far short of the board they were. The best result from 3 attempts was recorded.

Health and Wellbeing Survey
During the physical measures sessions children from Homework Clubs and P6 classes in schools A-D also completed a brief health and wellbeing questionnaire (Appendix 7)(an adaption of the questionnaire designed by Religning Children's Services (2018) for Scottish Government).

Table 4. Example questions from health and wellbeing questionnaire

How much do you like school?	
I don't like school at all	1
I don't like school very much	2
I like school a bit	3
I like school a lot	4
How often do you feel happy?	
Always	4
Often	3
Sometimes	2
Never	1

School E preferred to use a measure that they were already using in class, a Health and Wellbeing Wheel (Appendix 8). Children were asked to rate statements such as "I am healthy" and "I am active" on a scale of 1-10. The school provided pre-intervention and post-intervention responses from their homework club participants.

Children's feedback
The children were asked to provide anonymous feedback by writing on sticky notes what they thought about the Bairns' Tea Club, its activities and the food.

Parents' perceptions of the Bairns' Tea Club (School E)
Parents' completed a simple survey rating their agreement with a set of statements (1 = strongly disagree to 5 = strongly agree) at the start and finish of the project (free text boxes enabled additional comments to be captured).

Table 5. Parent survey statement-

1.	I have a positive relationship with the school
2.	I understand how my child learns at school
3.	I can confidently help my child with homework
4.	I spend quality time with my children
5.	The family meal is an important part of the project

Teachers' perceptions of the Bairns' Tea Club

Teachers who had children attending the Bairns' Tea Club were invited to participate in a short Likert-scale survey (Appendix 9). Staff were asked to rate how attending the Club had impacted children, in six key areas, on a scale of 5 = great improvement to 1 = much worse. Respondents also had the opportunity to share what they considered to be the greatest impact of the Club on participants.

Table 6. Staff survey

1.	School attendance
2.	Attitude towards school
3.	Behavior in class
4.	Engagement with learning opportunities
5.	Literacy skills
6.	Numeracy skills

Data Analysis

The study design used a repeated measures format. The skewed distribution of some of the parametric data meant that, as for the scored measures, and where applicable, the Wilcoxon signed ranks test was applied. Data was analysed using SPSS (Statistical Package for Social Sciences) software and quotes have been extracted as a means of illustrating participant responses.

Results

Although 201 participants were recruited overall, the repeated measures analysis, resulted in data being restricted to 26 Tea Club and 108 Control participants (note, no control group data was obtained for the numeracy and literacy measures). Attendance was variable and data for this was incomplete (Table 7).

Table 7. Mean daily attendance figures by school (figures incomplete)

	Monday	Tuesday	Wednesday	Thursday	Friday
School A	7.8	6.2	3.5	8.3	7.8
School B		5	7	2	
School C					
School D	13	12	13	12	14
School E	20	20	20	20	20

Literacy and numeracy assessment

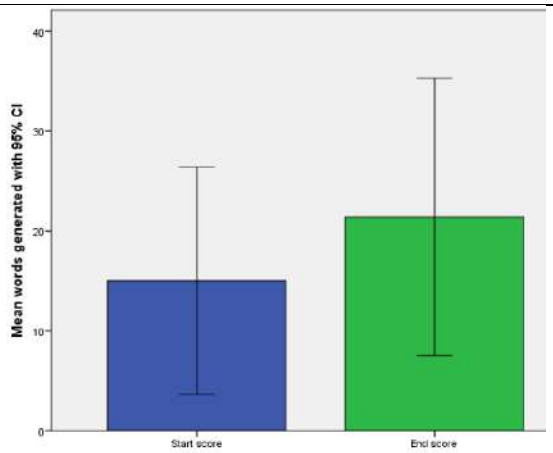

Figure 1. Mean start and end word scores for participants attending the Literacy Homework Clubs

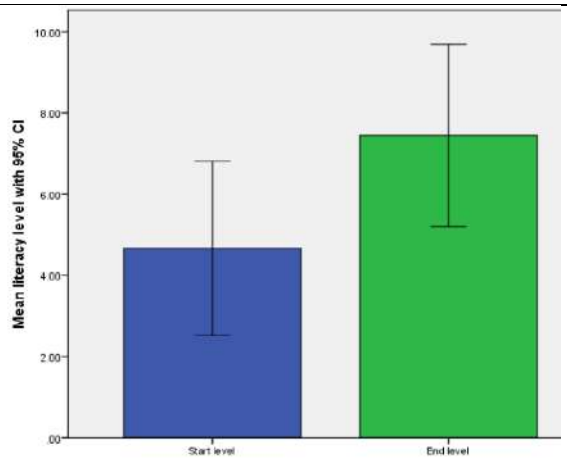

Figure 2. Mean literacy levels of improvement for children using the Lexia literacy programme in homework clubs

All children participating in the Tea Club made significant improvements in attainment over the course of the intervention. Participants who completed the literacy concept webs (Figure 1) demonstrated a significant increase in vocabulary (Z = -2.61, p = 0.009, d = 0.8, large effect). A similar result was found for participants whose literacy journey was measured using Lexia (Figure 2) (Z = -2.68, p = 0.007, d = 0.9, large effect).

Numeracy outcomes

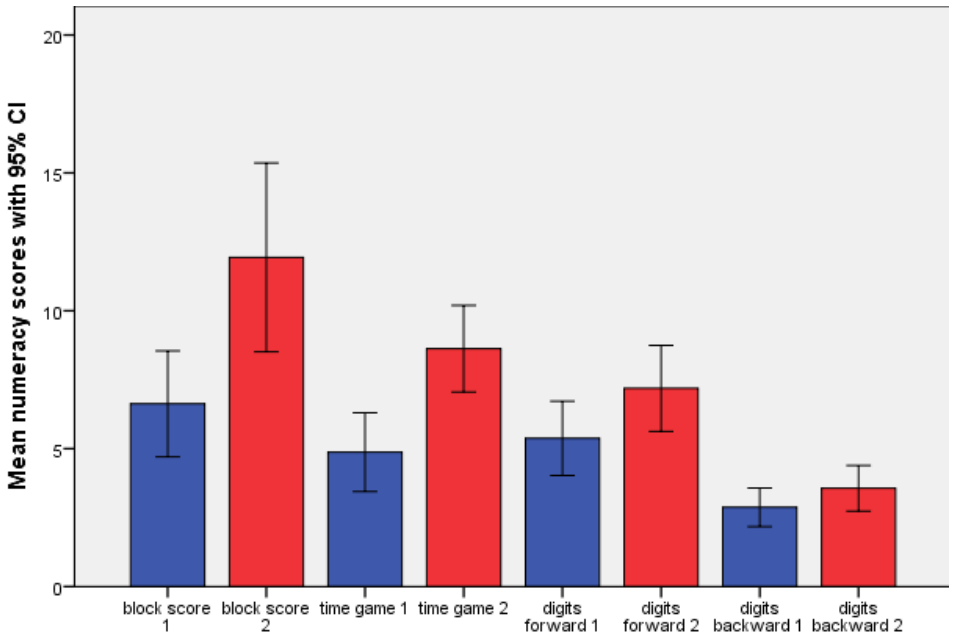

Figure 3. Numeracy scores for block task, time game, and forward and backwards digit recall for participants attending numeracy homework clubs.

Participants attending the Tea Club made significant improvements in the numeracy tasks across the intervention period. There was a significant difference in WISC block task score (Z = -3.21, p = 0.001, d = 0.8, large effect), timed shape game (Z = -3.4, p = 0.001, d = 0.8, large effect), WISC digit recall

task forward (Z = -2.6, p = 0.009, d = 0.6, medium effect) and digit recall backwards (Z = -2.64, p = 0.008, d = 0.7, medium effect) (Figure 3).

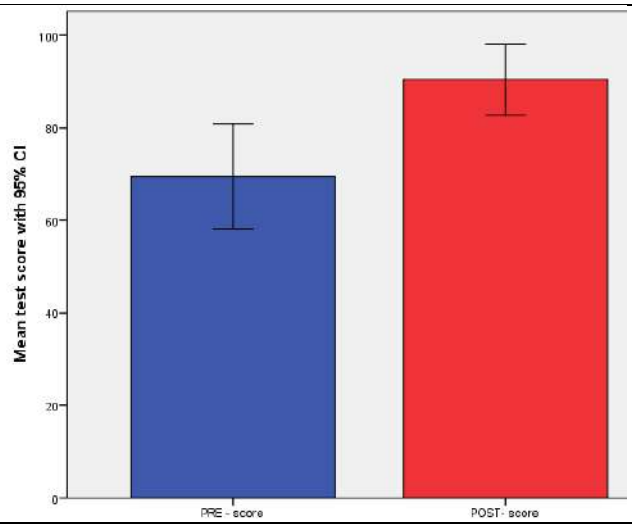

Figure 4. Pre- and post-intervention scores for school D participants on multiplication tests

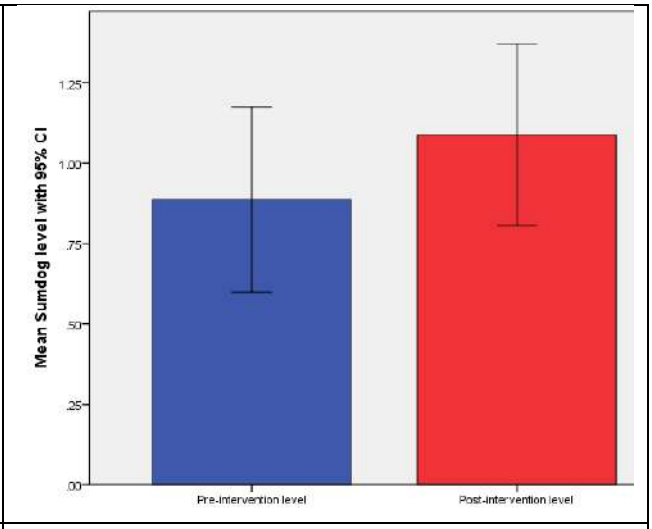

Figure 5. Pre- and post-intervention scores for school E participants on Sumdog assessments

School D used multiplication table tests to assess numeracy progress for club participants. All pupils had improved test results on completion of the project (Z = -2.37, p = 0.018, d = 0.9, large effect) (Figure 4).

School E used Sumdog level as an indicator of numeracy progress from beginning to conclusion of the homework club, and a significant improvement in score was noted (Z = -2.99, p = 0.003, d = 0.7, medium effect). Most children made greater than expected progress for the given time frame. The few children who did not progress had extenuating personal circumstances which negatively affected their educational engagement at the time (teacher's report) (Figure 5).

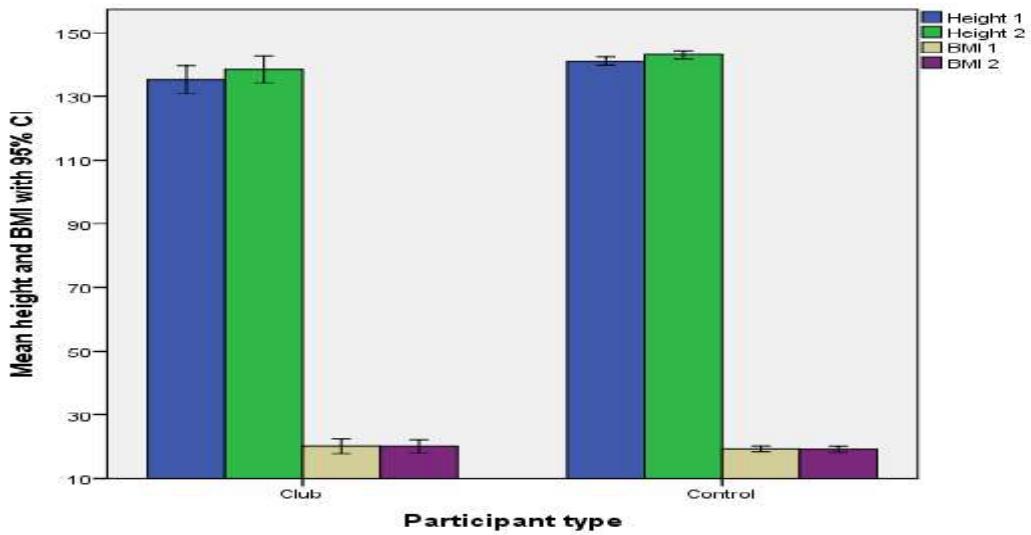

Figure 6. Mean height (Schools A-E) and BMI (Schools A-D) for Tea Club and Control participants at pre- and post-intervention time periods.

There was a significant difference in pre-intervention height between the Club attenders and the Control group ($t(132) = -3.63$, $p < 0.001$, $d = 0.7$, medium effect) – Tea Club participants were significantly smaller in stature. Both groups grew during the project and there was a significant difference (though within age-related norms) in pre- and post-intervention height for both Club participants (mean 135 vs 138cm, $t(25) = -10.1$, $p < 0.001$, $d = 0.3$, small effect) and the Control group (mean 141 vs 143, $t(107) = -10.96$, $p < 0.001$, $d = 0.3$, small effect). Club attenders grew significantly more than Control group during the project (mean 3.2 vs 2cm) ($t(132) = 2.86$, $p = 0.005$, $d = 0.7$, medium effect), and the difference in height between Club and Control groups was still significant at the post-intervention point ($t(132) = -3$, $p = 0.003$, $d = 0.6$, medium effect).
No significant differences were found for BMI pre- or post-intervention for Tea Club ($Z = -0.54$, $p = 0.592$) or Control participants ($Z = -0.46$, $p = 0.643$) (Figure 6).

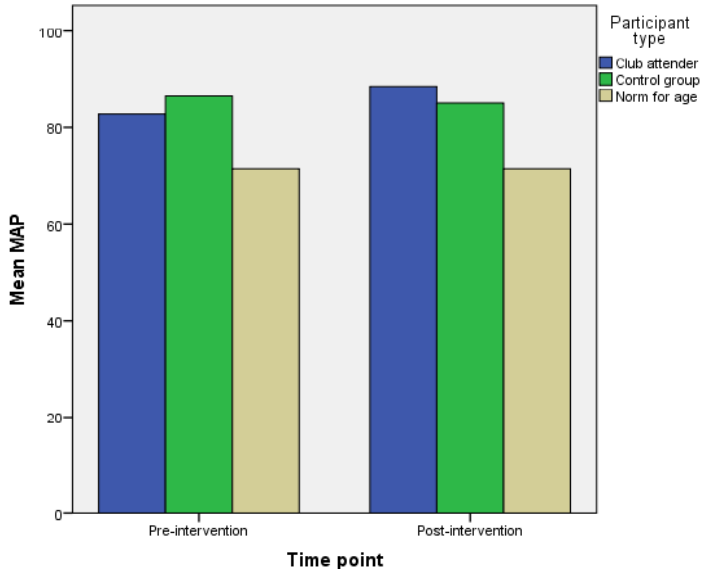

Figure 7. Mean MAP for Club attenders and Control group, compared with norm for age

No significant differences were found between pre-intervention and post-intervention Mean Arterial Pressure scores for Tea Club ($t(22) = -1.8$, $p = 0.094$) or Control group participants ($t(101) = 0.78$, $p = 0.437$). The differences between Control and norm MAPs (pre-intervention, $t(105) = 1.15$, $p = 0.268$) and post-intervention ($t(105) = 0.81$, $p = 0.42$)) and Tea Club and Norm MAPs (pre-intervention ($t(24) = 0.86$, $p = 0.398$) and post-intervention ($t(24) = 0.92$, $p = 0.37$) were also not significant (Figure 7).

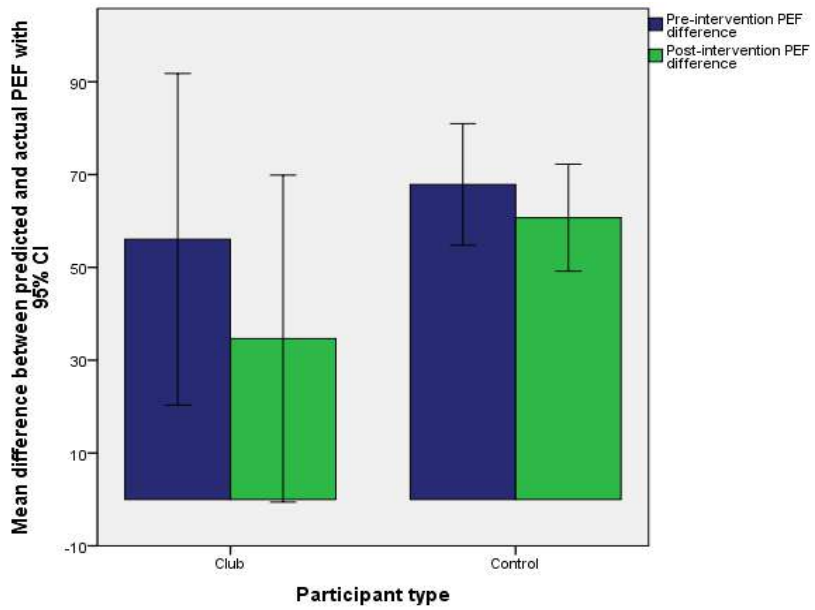

Figure 8. Mean differences in expected and actual peak expiratory flow (litres per minutes)for Tea Club and Control participants, at pre- and post-intervention.

Comparing the difference in actual and expected peak expiratory flow for Control group (mean = 66.9) and Club participants (mean difference = 57.6), pre-intervention ($t(129) = 0.605$, $p = 0.546$) resulted in non-significant findings. However, the post-intervention measures elicited a significant difference between Club (mean = 13.5) and Control group differences in actual versus predicted PEF (mean = 60.4) ($t(129) = 0.605$, $p = 0.002$, $d = 1.3$, large effect). No significant results were found between pre- and post-intervention differences for Club ($t(25) = 0.77$, $p = 0.452$) or Control group subjects ($t(104) = 1.21$, $p = 0.228$). The difference between actual and expected peak expiratory flow reduced across the study period. Peak expiratory flow increased to a level closer to that expected for height and age for both groups, with greater improvements observed in the Tea Club participants (Figure 8).

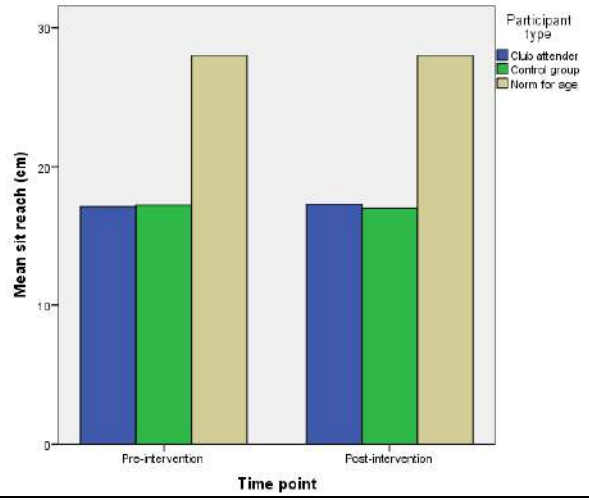

Figure 9. Pre- and post-intervention measurements (cm) for club attenders, control group and norm for age, for the sit and reach exercise.

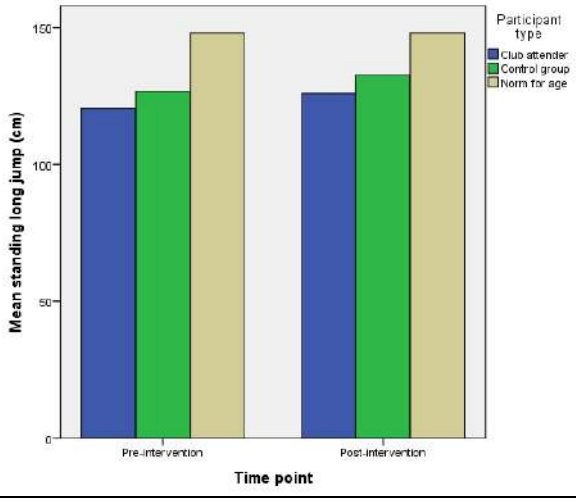

Figure 10. Pre- and post-intervention measurements (cm) for club attenders, control group and norm for age, for standing long jump exercise.

Comparing participants' scores to age related norms both Control and Tea Club participants' sit and reach performances were significantly less than predicted by Norm for age, in both the pre-test ($x^2(2) = 36.76$, p = 0.008, d = 2.5, large effect) and post-test conditions ($x^2(2) = 16$, p = 0.025, d = 2.7, large effect). No significant difference was found between performance of Club attenders and Control group at the pre-intervention (U = 1379.5, Z = -0.07, p = 0.948) or post-intervention (U = 1273.5, Z = -0.08, p = 0.933) sample points. Both Club attenders (Z = -0.71, p = 0.475) and Control group subjects (Z = -0.83, p = 0.404) failed to make significant improvements on sit and reach performance during the study period (Figure 9).

Examination of the standing long jump measures revealed a significant difference between Club attenders and Norm for age (t (24) = -5.55, p < 0.001, d = 2.3, large effect) and between Control group subjects and the Norm (t (106) = -7.9, p < 0.001, d = 1.7, large effect), with all participants failing to reach their age-expected norms pre-intervention. This was replicated post-intervention (Club and Norm (t (24) = -4.35, p < 0.001, d = 1.7, large effect); Control and Norm (t (106) = -5, P < 0.001, d = 1, large effect)). The differences between Control group and Club participants were not significant at either the pre-intervention point (t(130) = -1.3, p = 0.194) or post-intervention point (t(130) = -1.2, p = 0.223). Both groups improved their performance on the long jump activity at the 2 sample points but failed to meet the expected norm for age. This difference was significant for Control group (Z = -2.71, p = 0.007, d = 0.3, small effect) but not for Club attenders (Z = -1.2, p = 0.214) (Figure 10).

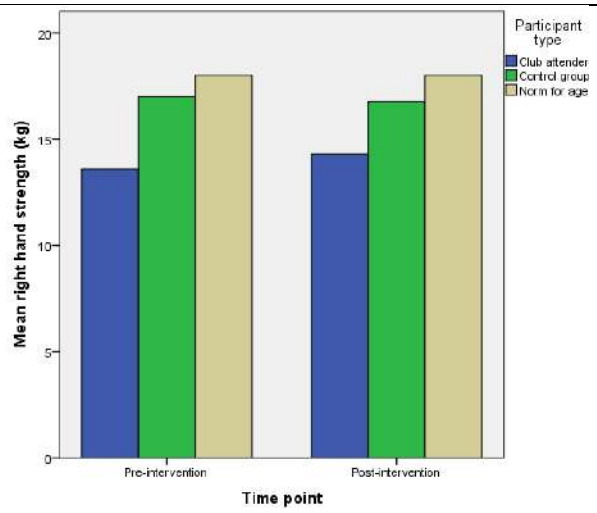

Figure 11a. Mean pre- and post-intervention measures of right hand strength (kg) for Tea Club and Control group participants, compared to Norms for age.

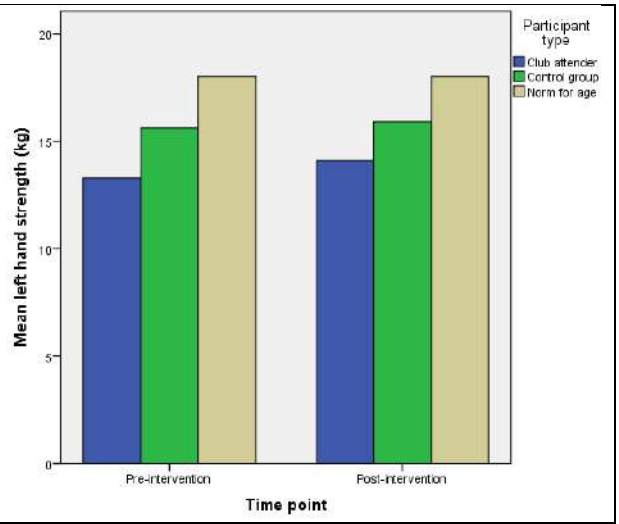

Figure 11b. Mean pre- and post-intervention measures of left hand strength (kg) for Tea Club and Control group participants, compared to Norms for age.

There was an observed significant difference in grip strength between Club attenders and Control group at pre-intervention time (right hand, U = 813.5, Z = -3.32, P = 0.001, d = 0.3, small effect; left hand, U = 950, Z = -2.56, p = 0.011, d = 0.2, small effect)), though post-intervention only significant differences were observed in the right hand (right hand, U = 961, Z = -2.24, p = 0.025, d = 0.2, small effect; left hand, U = 1011, Z = -1.95, p = 0.051). Tea Club participants' and Control participants' grip strength was significantly less than Norms for age at pre-intervention point (right hand, $x^2(2) = 11.5$, p = 0.003; left hand, $x^2(2) = 7.7$, p = 0.021) but not post-intervention point (right hand, $x^2(2) = 5.6$, p = 0.061; left hand, $x^2(2) = 4.9$, p = 0.085). Both Control and Club participants' left- and right-hand strengths had increased during the time period (Figures 11a and 11b).

Health and wellbeing questionnaire

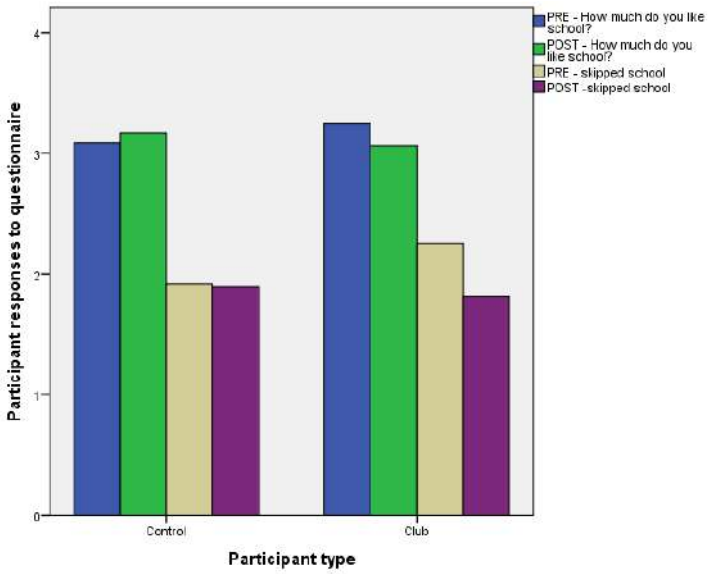

Figure 12. Pre- and post-intervention responses to school questions from Control participants and Club attenders (schools A-D)

There were no significant differences between how much Control (Z = -1.09, p = 0.274) and Club (Z = -0.72, p = 0.472) participants liked school, in the pre- and post-intervention questionnaires. Club participants were significantly more likely to have skipped school than Control participants in the pre-intervention questionnaire (U = 522, Z = -3.19, p = 0.001, d = 0.3, small effect). The post-intervention questionnaire showed no significant difference between groups for self-reported truancy (U = 707, Z = -0.73, p = 0.465), with Club attenders reporting significantly less truancy in the post-intervention survey (Z = -2.65, p = 0.008, d = 0.7, medium effect (Figure 12).

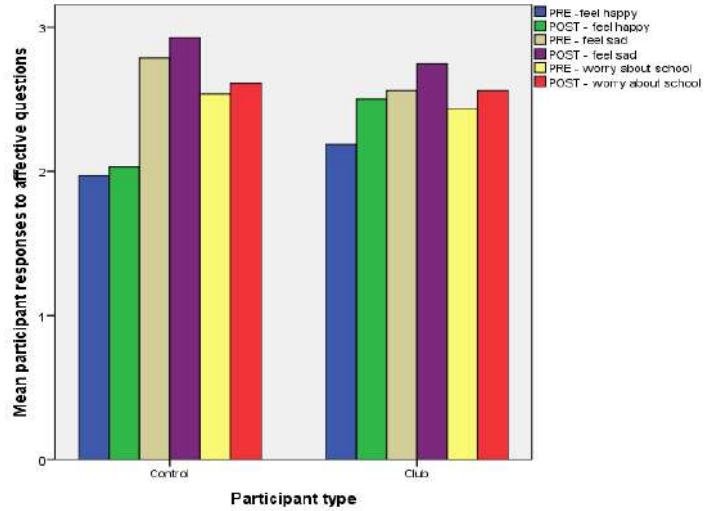

Figure 13. Pre- and post-intervention responses to affective questions from Control participants and Club attenders (schools A-D)

Differences between each group's pre- and post-intervention happiness ratings were not significant (Control (Z = -0.68, p = 0.496), Club (Z = -1.1, p = 0.234) nor were pre- and post-intervention worry ratings (Control (Z = -0.56, p = 0.575), Club (Z = 0, p = 1). Comparing the Club with Control participants revealed no significant differences in sadness ratings (pre-, U = 620, Z = -1.34, p = 0.18; post-, U = 625.5, Z = -1.48, p = 0.138) nor worry ratings (pre-,U = 723, Z = 0.33, p = 0.743; post-, U =

756, Z = -1.48, p = 0.138). There were no significant differences between Control and Club participants in pre-intervention measures of happiness (U = 640, Z = -107, p = 0.286). However, Club participants had significantly higher rates of self-reported happiness than the Control participants at the post-intervention point (U = 508.5, Z = -2.33, p = 0.002, d = 0.4, medium effect) (Figure 13).

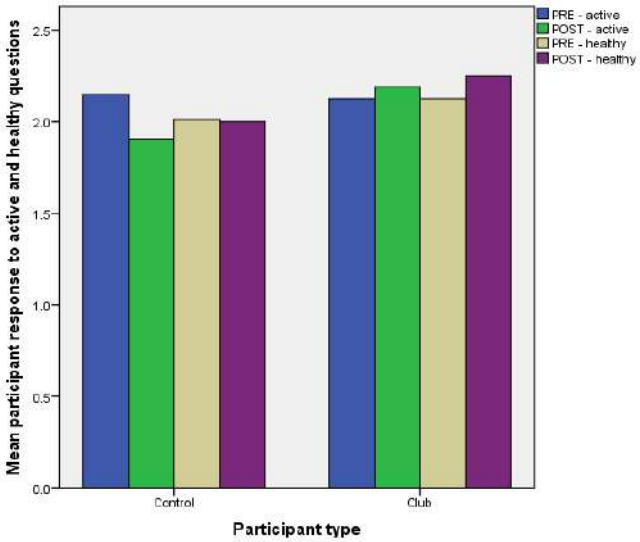

Figure 14. Pre- and post-intervention responses to affective questions from Control participants and Club attenders (schools A-D)

No significant differences were found between Control and Club participants for self-reported activity levels at either sample point (pre-, U = 724.5, Z = -0.31, p = 0.755; post-, U = 640.5, Z = -1.06, p = 0.288) or for self-reported healthiness (pre-, U = 688, Z = 5248, p = 0.52; post-, U = 630, Z = 5190, p = 0.248) in Schools A-D. No significant differences were found between pre- and post-intervention healthiness (Z = -0.87, p = 0.931) or activity level (Z = -0.58, p = 0.564) for Club, or for Control group participants in these schools (healthiness (Z = -0.18, p = 0.857), activity level (Z = -1.71, p = 0.087) (Figure 14). This suggests levels of self-reported health and activity did not change for either group during the course of the project.

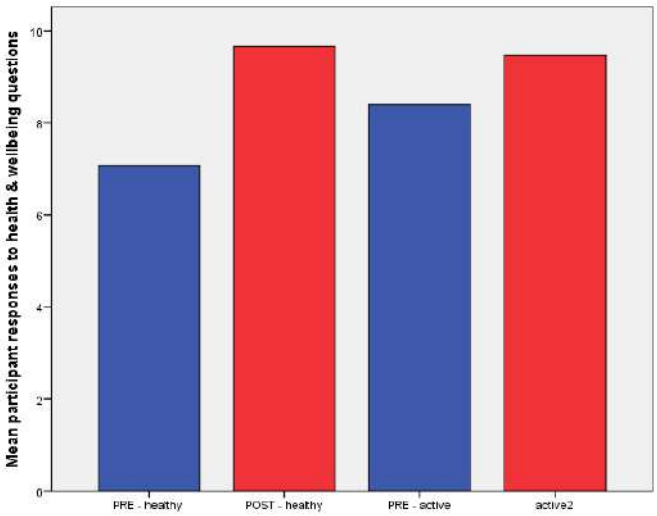

Figure 15. Pre- and post-intervention responses (from 1-10) for health and activity questions for Club attenders (school E).

Responses from the Tea Club at School E showed significantly increased ratings for self-reported healthiness (Z = -2.39, p = 0.017, d = 0.6, medium effect) and self-reported activity levels (Z = -2.03, p = 0.042, d = 0.5, medium effect) (no control group data was available for this measure) (Figure 15).

Children's feedback

A word cloud was developed from the pupils' feedback regarding the homework club, the food and the activities (Figure 16).

Figure 16. Word cloud of children's responses to the Bairns' Tea Club

Overall, the Club received positive responses from the children and children's comments about the club included "I think everything's just right", "Its great", " I like to come because its helping me to learn maths", "I think it's absolutely great but people argue a bit", " I like reading dinosaur books and playing literacy games", "Thumbs up!". Many children commented they enjoyed learning in the Club and that they made friends with other attenders. One child reported "I learned I could behave". Although many children reported enjoying the food options, with steak pie, sausages and muffins particularly popular, others commented that the food was poor. The menu was designed to meet guidelines for school meals and whilst acknowledging the good intentions of providing a nutritionally balanced menu, no record of waste or food preference, was kept. Some issues became evident through staff comments, for example, many children did not eat the soup particularly the chunky broth-type soups. On some days, the tea menu duplicated the school lunch menu so children were reluctant to eat the same meal twice in one day. Other comments regarding the food included lack of choice. For example, if children did not like lasagne and the meal option was beef lasagne or vegetarian mince lasagne, some children would eat neither. Consequently, the meal was disposed of, without the child eating anything.

Parent perspective on Bairns' Tea Club

Data was only available from School E:-

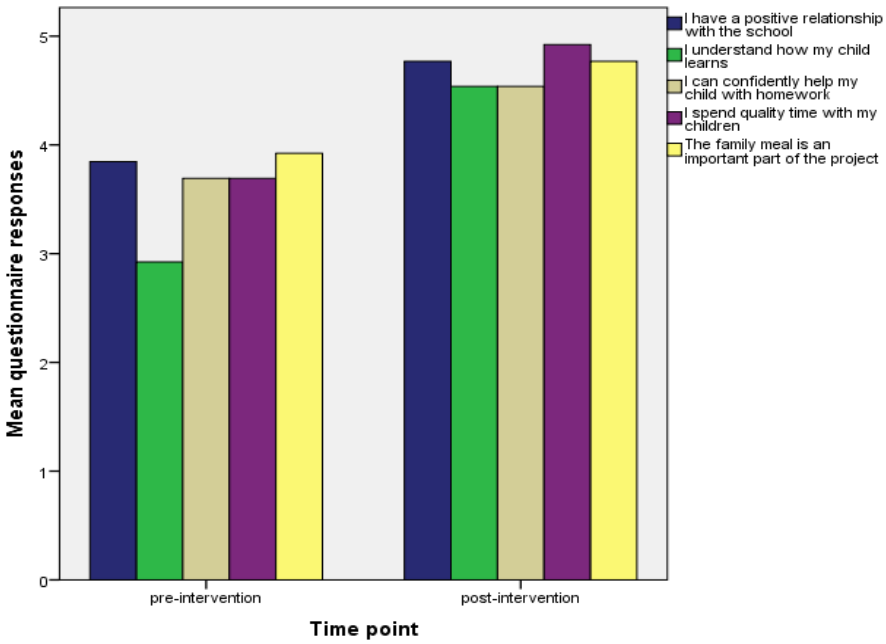

Figure 17. Responses to parental questionnaire pre- and post-intervention.

At the end of the project there were significantly higher levels of agreement from the parents regarding having developed a positive relationship with the school (Z = -2.41, p = 0.016, d = 0.7, medium effect), understanding how their child learns at school (Z = -3.12, p = 0.002, d = 0.9, large effect), being confident helping with homework (Z = -2.4, p = 0.016, d = 0.7, medium effect) and that the Club allowed them to spend quality time with their children (Z = -2.98, p = 0.003, d = 0.8, large effect) (Figure 17). The meal was considered an important part of the project right from the outset.

Parents additionally commented that: 'I like the meal as meal times in our house are stressful. Getting the chance to spend more time together as a family, we have more fun and are happier'; 'I like spending quality time with my child. Helped me build confidence, helped my anxiety and building relationships with adults'; 'getting everyone to sit down at a table is hard and this helps us all sit down together'; 'my child has gained a lot of confidence from taking part. I have a stronger bond with my children'; 'the project helped us as a family get over some tricky times'. The dominant thread related to the value of quality time derived from sitting down together as a family, as well as the opportunity to build bonds with the children and their teachers.

Teacher responses
Nineteen members of staff completed the post-intervention questionnaire.

Table 8. Staff perceptions of Tea Club impact

		Much worse	A little worse	Stayed the same	Some improvement	Great improvement
1.	School attendance			73.6%	15.8%	10.5%
2.	Attitude towards school		5.3%	52.6%	26.3%	15.8%
3.	Behavior in class			42.1%	52.6%	5.3%
4.	Engagement with learning			52.6%	31.6%	15.8%
5.	Literacy skills			52.6%	47.4%	
6.	Numeracy skills			52.6%	42.1%	5.3%

Behaviour in class was perceived to be the most improved aspect of participating in the club with the teachers also reporting enhanced engagement with learning. Approximately half of the teachers noted some improvements in numeracy and literacy, but a similar proportion felt that there had been little change. There was also a lesser impact on perceptions of attendance.
Teachers' perceived improvements in the child's confidence as well as their social skills to be most benefical: 'social benefits of an informal learning atmosphere help children who are struggling socially to make positive relationships'; 'pupils seem much happier in school. Makes children feel included, improved social skills with other children and adults in school'; 'engaging parents in their (child's) environment. Learning how to play together and enjoy meal times together'; 'engagement with learning has been great, mainly due to increased confidence in literacy and numeracy of children who attend'; 'biggest impact of club was on the relationship parents have with their children. They enjoyed having a meal and playing together'; 'pupils are more resilient to challenges in school; subsequently their attitude and engagement have been enhanced the most'. During the project the teachers commented on the challenges of trying to deliver stimulating attainment and activity sessions for the diversity of age ranges attending. This led to some schools offering separate early years' sport activity sessions while older year groups engaged with the homework element and alternating this format on other nights of the Tea Club. In School E, one of the sports' activity sessions was substituted for a family cookery or arts and crafts session – allowing older and younger groups to do age-appropriate activities in their sports session. The cookery sessions were highly rated by both children and parents because of the fun they had preparing food together.
One staff member mentioned his enthusiasm to continue a similar club within his setting. However, he did acknowledge difficulties encountered with the behaviour of some participants. This led to different scheduled patterns of attendance for specific participants. Although his Club had guidelines in place for the children, his recommendation was that participants sign an agreement to respect each other within and out with the Club.

Returning to the research questions:
1. Can a 10-week homework and hot meal intervention have an impact on measures of numeracy and literacy in primary school age children?
2. Can a 10-week homework and hot meal intervention have an impact on measures of health and wellbeing in primary school age children?
3. What are the children's perceptions of the impact of their engagement with Dundee Bairns' Tea Club?

4. What are the parents' perceptions of the impact of pupil engagement with Dundee Bairns' Tea Club?
5. What are the teachers' perceptions of the impact of pupil engagement with Dundee Bairns' Tea Club?

The research outcomes illustrate that the Tea Club intervention significantly impacted literacy and numeracy measures for those in attendance. However, there were more mixed findings in relation to health and wellbeing. The growth in stature was greater for the children attending the club but there were lesser changes in other measures of fitness. Most had some non-significant improvement though the Tea Club participants were significantly nearer to their norm values for peak expiratory flow following the Tea Club intervention than their control group peers. Tea Club participants had significantly lower grip strength (a proxy for overall strength) than the control group subjects with some small improvement in this following the project. While all of the children's grip strength (club and control pupils) improved toward their age-related norms at the end of the 10 week period this was not the case for flexibility (sit and reach) or for power (standing long jump).

Self-reported truancy in the Tea Club participants was significantly higher than the control group pre-intervention and was reported to be significantly improved post-intervention. Club members had significantly higher rates of happiness post-intervention when compared with the control group. Only one school noted significant improvements in ratings of health and activity levels (however, this school was the only one using the 'Health and Wellbeing Wheel'; and no control data was available).

Teachers, parents and pupils all report increased pupil confidence as one of the key benefits of engagement with the Tea Club. Enhanced relationships are also reported either deriving from increased family time together learning, playing and eating or building bonds between children, parents and teachers.

Discussion

Attainment

One of the key aims of the Tea Club project was to reduce poverty-associated attainment which can be exacerbated for those at risk of food hunger (ATL, 2016). Children were specifically selected on the basis of the school's knowledge of who was in need and who therefore could benefit from what was being offered. Baseline measures of numeracy, specifically for those who were engaging with the Sumdog software, clearly demonstrated that the children were below their age-related standards (however, there was no school control group data by which to benchmark the pupils' attainment). Those who engaged with the club demonstrated significant improvements in their numeracy and literacy test scores and in respect of numeracy (as evidenced through the Sumdog data) their rate of progress was quicker than could be anticipated for the duration of the intervention. Therefore there appears to be evidence that a more intense (lower staff to student ratio) and focused approach has been able to positively impact on pupil attainment. Heightened parental involvement in their child's learning may also have contributed to this result. The quantitative parent comments reveal that those who engaged with the Tea Club noted their own enhanced understanding of the learning tools being used as well as increased confidence in supporting their child's learning (Rouse & Ware, 2017). While the objective data demonstrated significantly better results the teachers seemed less perceptive to the degree of change – though they noted improvements in behaviour and engagement with classroom activities. The pupils' self-reported attendance significantly improved (again less noted by the teachers) and this may also have been a factor positively impacting on attainment. Good nutrition or the absence of hunger increases children's capacity to concentrate (ATL, 2016) and it is hoped that this may also have been a

contributory influence in improved numeracy and literacy for those attending the Tea Club. However, comments were made about the attractiveness of some of the food offers. Key to the project was food consumption and avoidance of hunger. Therefore, this aspect would need to be reviewed if the project was to be extended.

Health and Wellbeing

It was anticipated that the delivery of a balanced meal along with activity interventions (as per the Monday and Friday Active Schools sessions) would have an effect on measures of health and wellbeing. The measure where there was significant gain related to stature. The Tea Club participants' mean growth in height of was 3cm was significantly more than the 2cm gained by Control participants. It should be noted that Tea Club children were significantly shorter in stature and the selection process (inclusion criteria) may have skewed group characteristics. The growth was within age-related expectations for both Tea Club and Control subjects – however, it may be that the nutritional benefits of the Club were more impactful for those pupils who were currently lagging behind their peers in terms of stature.

It is of note that all of the pupils' (Control and Club) peak expiratory flow rates, flexibility (sit and reach), power (long jump) and handgrip strength scores were below what would be considered standard for children of similar ages. There were some small improvements in the health and fitness measures following the intervention (peak expiratory flow, grip strength) with this being more observed in those who participated in the Tea Club. It may be that the embedded activity sessions helped to reduce some of the fitness attainment gaps however, the range of ages at the club made true engagement with these sessions difficult for some participants. Body mass indices were also little affected during the time of the intervention. Growth spurts and the variation in points of developmental advancement for the children may mean that effects get nullified when aggregated and there have been critiques of the validity and reliability of fitness testing measures in children (Harris & Cale, 2006). A longer intervention period with a structured exercise intervention and objective recording of volume of activity (only School E demonstrated improvements in self-reported ratings of healthiness and activity levels) would potentially enable the impact of the Tea Club on health and wellbeing measures to be more thoroughly investigated.

Other outcomes

It was particularly rewarding to note that teachers observed that the children were happier in school, had enhanced relationships and social skills, had more confidence and consequently were more willing to try things. The physical and mental health of a child can be impacted if food poverty prevails (ATL, 2016). Therefore it is hoped that the gains observed in self-assurance, communication and interaction with others will positively impact on general wellbeing and is reflected in the significantly higher rates of happiness observed in the Tea Club participants when compared to the control group.

The building of trust between parents and schools was also an outcome of the Thriving Places project (McLaren, 2016) but not all schools felt able to involve parents in all aspects of the club viewing the key target audience in this pilot intervention as the children. For some schools it may take longer to build a rapport with parents in order to get them engaging with the Tea Club. (Two schools were about to merge, and one school had undergone significant restructuring with a completely new management team therefore they opted to adopt an intervention model that would work for their population within the timeframe of the project).

Some of the outcomes of the project could not have been anticipated and were only elicited through project steering group meetings. Two quite powerful vignettes which emerged in these discussions are detailed below.

Example 1:
One headteacher recounted the tale of a pupil being particularly animated about the Tea Club and he would regularly stop the headteacher in the corridor to enquire as to 'what's for tea tonight sir?' It was evident that the pupil was really enjoying the opportunities that the Club afforded. However, when contextual information was shared it emerged that the boy was one of nine children living in a chaotic household with quite complex sibling relationships (different parent combinations). The children's ages covered quite an extensive period and that one of the older male half-siblings regularly 'battered' the boy, therefore the Tea Club provided a refuge.

Example 2:
Another headteacher shared a story of a mother whose children had been taken into care and she was keen to have them returned to the family home. However, in order for this to happen she had to evidence sustained engagement with the children but under supervised conditions. The Tea Club provided such an opportunity and the mother attended every session with very positive interactions with the children noted. The anticipated outcome was that steps would now be taken to return the children to the care of the mother.

Both of the above scenarios serve to illustrate the real-life circumstances for those accessing the Tea Club and the value of the project beyond that of addressing attainment and food poverty.

Limitations
At the outset of the project the ideal scenario would have been that all clubs adopted the same model (parents and pupils to attend the homework and hot meal elements). However, as outlined above the changing status of some of the schools and the challenges around trust that can exist in the parent-school relationship meant that each school had to determine a model which would maximise engagement for those pupils most in need of the intervention.

The intensity of the school calendar and the complex issues that many of the teachers are dealing with meant that for the researchers there were challenges accessing the clubs meaning that some of the data collection was more compressed than might have been preferred.

Some, but not all, schools were using numeracy and literacy packages that test and track pupil attainment and benchmark achievement against age-related norms. The non-uniformity/standardisation of tests instruments resulted in the research team having to adopt a mixed economy of measures, a less than ideal scenario (as those schools who had software packages were understandably less keen on the team further testing the children with different tools).

It should be acknowledged that while a battery of standard fitness tests were used within the survey – testing in young age groups is often the subject of critique (Harris & Cale, 2006). This specifically relates to comparing the data to benchmarks. Intra-subject data can have more reliability as in the pre-/post-intervention measures conducted here.

The numbers of pupils attending the Tea Club was fairly consistent across the intervention period however, they were not all the same children as some stopped attending and others were offered places at the Club. This reduced the numbers of participants available for repeated measures analyses. It also meant that no between-group statistical comparison of the models could be examined for differentiated impact.

A lack of attendance data meant that there could be no examination of a correlation between volume of engagement with the Tea Club and outcome measures.

The wide range of pupil ages for those clubs who had included children from all school stages made delivery of some activities most notably, the sports activities, particularly challenging.

Control group data was not available for all measures limiting some of the comparisons of project impact.

Recommendations

- The findings would benefit from wider dissemination, including to policy makers.
- Further investment in research (for example, from Scottish Government's Fair Food Funds) would enable more pupils/schools to be recruited to an expanded project with a longer intervention period (minimally one school year) with consideration given to sustainability.
- A standardised approach should be adopted for recruitment, measurement (eg. use of Scottish Survey of Literacy and Numeracy (SSLN) attainment data) and model of delivery (ideally with parent involvement), and consideration should be given as to how Pupil Equity Funds can support Tea Club activities.
- A project officer should be appointed to co-ordinate all aspects of the project including family follow-up, multi-agency liaison and engagement with Tayside Contracts regarding the menus and monitoring of food consumption.
- Clubs should segregate activities for older and younger pupils and consider family cooking sessions as an additional activity.
- Establish a citywide food poverty forum to share resources/outcomes with other family-oriented projects (eg. the Rowantree Nursery Play, Learn, Eat Well project).

Conclusion

The Dundee Bairns Tea Club has been able to evidence that even within a short time frame (10 weeks) a homework and hotmeal after school activity for a targeted pupil group can positively impact attainment, pupil perceptions of health and happiness, and teachers' perceptions of pupil confidence and engagement with learning. All stakeholders note the relationship benefits that were derived from the club both in terms of building bonds between teachers and parents, as well as enabling families to spend quality time together. There is evident merit in investing in this type of initiative to enhance the attainment and potential future employment opportunities of those living in, or at risk of, food poverty in Dundee.

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Appendix 1. Participant Information Sheet

My name is Dawn Short and I am a researcher at Abertay University, Dundee.

I am working on a research project with children in your child's school to investigate if children's health and fitness can improve through participation in a health and fitness class topic. I would like to invite your child to participate in my study.

I will be working with the children to help them measure their fitness before and after doing some exercises in class. I will repeat the measurements several weeks later and would hope to see the children's level of fitness has improved during their project.

Participation in the study is completely voluntary and at any time during the study, the parent or child may withdraw from the study. However, once the data collected has been anonymised this will no longer be possible. There are no known risks from this study and the findings may benefit all children as they may help the schools to develop strategies to improve children's health and fitness. The data gathered from the study will be used to write about the project the children are doing in class but no names of children or other identification will be used.

As I will be working with the whole class and their teacher, as part of their health topic, you need only complete this form if you do not wish your child to take part. The child will be asked if they want to take part before each session. Once the study is complete, more information about the project will be provided. However, this will be general as the performance of individual children will not be available.

This research complies with the British Psychological Society Guidelines for Ethical Practice in Psychological Research and has been passed by Abertay University School of Social and Health Sciences Research Ethics Committee.

If you need any more information about the study or wish to ask any questions, please contact me (d.short@abertay.ac.uk) or Ms Andrea Cameron (a.cameron@abertay.ac.uk, Tel no. 01382 308195).

Thank you for reading this information

<……cut here……>

Complete and return IF YOU DO NOT WISH YOUR CHILD TO TAKE PART

Child's name

……..

Child's class and school

……

I DO NOT WISH MY CHILD TO TAKE PART IN THE STUDY

Signed (parent/carer) ……

Appendix 2. Assent Form

My name is Dawn Short and I am a researcher based at Abertay University in Dundee. I am working with your school to find out if working on your Health and Fitness Topic can improve your health and fitness.
I have some simple body tests for you to try out and you can record your scores on a record sheet.
If are happy to take part, please write your name in the box at the bottom of the page. If you change your mind or do not want to take part in any particular task, that's ok too! Just let me know and you can do something else instead.
I am happy to take part in the health and fitness activities.

Appendix 3. Digit recall

Name..... Age..... Class.....

WISC Digit span task

DIGITS FORWARD

READ TO CHILD:

I am going to say some numbers. Listen carefully, and when I am through, say them right after me. SAY: "Ready" BEFORE EACH QUESTION.

(One item is shown per screen; e.g., item 1A is shown on one screen, and item 1B on the next)

		CORRECT	WRONG
1.	A. 3 - 8 - 6	1	2
	B. 6 - 1 - 2	1	2

CAPI CHECK: IF BOTH A & B ARE CODED WRONG, SKIP TO DIGITS BACKWARD.

2.	A. 3 - 4 - 1 - 7	1	2
	B. 6 - 1 - 5 - 8	1	2

CAPI CHECK: IF BOTH A & B ARE CODED WRONG, SKIP TO DIGITS BACKWARD.

3.	A. 8 - 4 - 2 - 3 - 9	1	2
	B. 5 - 2 - 1 - 8 - 6	1	2

CAPI CHECK: IF BOTH A & B ARE CODED WRONG, SKIP TO DIGITS BACKWARD.

4.	A. 3 - 8 - 9 - 1 - 7 - 4	1	2
	B. 7 - 9 - 6 - 4 - 8 - 3	1	2

CAPI CHECK: IF BOTH A & B ARE CODED WRONG, SKIP TO DIGITS BACKWARD.

5.	A. 5 - 1 - 7 - 4 - 2 - 3 - 8	1	2
	B. 9 - 8 - 5 - 2 - 1 - 6 - 3	1	2

CAPI CHECK: IF BOTH A & B ARE CODED WRONG, SKIP TO DIGITS BACKWARD.

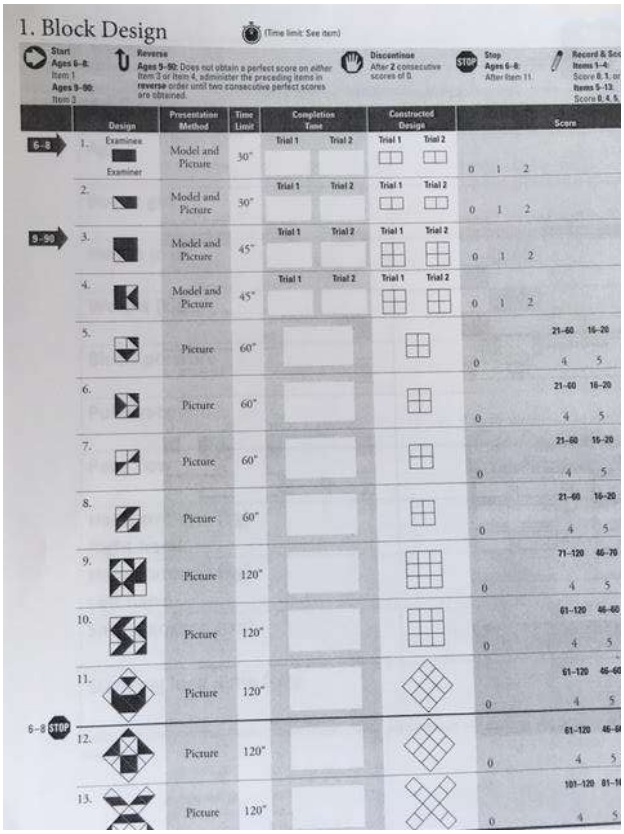
6.	A. 1 - 6 - 4 - 5 - 9 - 7 - 6 - 3	1	2
	B. 2 - 9 - 7 - 6 - 3 - 1 - 5 - 4	1	2

CAPI CHECK: IF BOTH A & B ARE CODED WRONG, SKIP TO DIGITS BACKWARD.

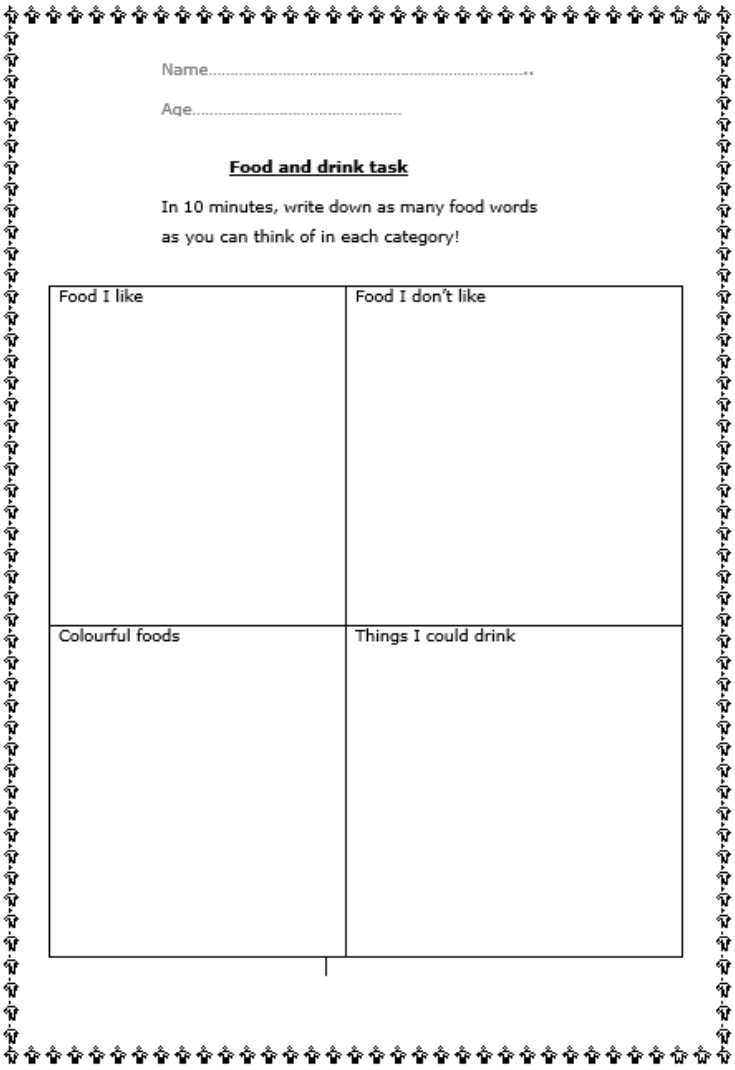
7.	A. 5 - 3 - 8 - 7 - 1 - 2 - 4 - 6 - 9	1	2
	B. 4 - 2 - 6 - 9 - 1 - 7 - 8 - 3 - 5	1	2

CAPI CHECK: IF BOTH A & B ARE CODED WRONG, SKIP TO DIGITS BACKWARD.

Appendix 4. Block design



Appendix 5. Literacy concept web



Name.....

Age.....

Food and drink task

In 10 minutes, write down as many food words as you can think of in each category!

Food I like	Food I don't like
Colourful foods	Things I could drink

Appendix 6. Body measures record

My Body

Age			
Boy or girl			
Height (cm)			
Weight (kg)			
Blood pressure			
Pulse rate			
Peak flow			
Hand strength (kg) Right hand			
Hand strength (kg) Left hand			
Sitting stretch (cm)			
Standing long jump (cm)			

Please measure peak flow, hand strength of both hands, sitting stretch and standing long jump three times ☺

Appendix 7. Health and wellbeing quiz

Welcome to the Children's Well-being survey!

We are going to ask some questions about your health and well-being.

What is your name?

…….

If you are happy to answer the questions, please listen to the questions as they are read out and mark your answers on the sheet. If you do not want to answer the questions, you can stop now or at any time during the survey.

Listen to the question and the answer options and then circle the number next to the answer that best fits how you feel. Remember, this is not a test, just say what you think. We will not tell anyone the answers you give. If there are any questions you don't want to answer you don't have to.

Remember you can just stop answering questions at any point if you don't want to continue.

About you

The first few questions are about you.

How old are you?

1. 9 years old

2. 10 years old

3. 11 years old

4. 12 years old

Are you a boy or a girl?

1. Boy 2. Girl

What year are you in at school?

1. P5 2. P6 3. P7

About school

The next few questions are about school. There aren't any right or wrong answers – we're just interested in what you think!

How much do you like school?

1. I like it a lot
2. I like it a bit
3. I don't like it very much
4. I don't like it at all

Explain your answer

…… …… …… ……

How often does your teacher help you when you need help?

1. Always
2. Often
3. Sometimes
4. Never

How often do you get along well with your teacher?

1. Always
2. Often
3. Sometimes
4. Never

How often do you get into trouble with the teachers at school?

1. Always
2. Often
3. Sometimes
4. Never

Family

Not all families are the same. Some have mums and dads, others have just a mum or a dad, or another person who looks after the children. By parents, we just mean whoever looks after you at home.

Have you ever skipped school, when your parents didn't know, even if only for half a day or a little while?

1. Yes, I have skipped school

2. No, I have never skipped school

How often do you enjoy being with your family?

1. Always
2. Often
3. Sometimes
4. Never

How often do you sit down at a table to eat a main meal with one or both of your parents?

1. Every day

2. Most days

3. Some days

4. Rarely

5. Never

About how you feel

The next questions are about how you feel. Everyone has times when they feel happy, sad or angry.

How often do you feel happy?

1. Always

2. Often

3. Sometimes

4. Never

What makes you feel happy?

…… …… …… ……

How often do you feel sad?

1. Always
2. Often
3. Sometimes
4. Never

How much do you worry about not doing well at school?

1. A lot
2. Quite a lot
3. Not very much
4. Not at all

How often do you feel afraid or scared?

1. Always
2. Often
3. Sometimes
4. Never

How often do you laugh?

1. Always
2. Often
3. Sometimes
4. Never

How often do you lose your temper?

1. Always
2. Often
3. Sometimes
4. Never

About your health

The next questions are about your health.

How is your health in general? Would you say it is…?

1. Very good

2. Good

3. Fair

4. Bad

5. Very bad

The next question is about being active. Being active is anything that moves your body, makes your heart beat faster and makes you get out of breath some of the time.

You are active when you play in sports, take part in school activities, play with friends or walk to school. Some examples are running, walking quickly, cycling, dancing, skateboarding, swimming, football and gymnastics.

How often do you spend time doing things like that?

1. Every day

2. Most days

3. Some days

4. Rarely

5. Never

The next questions are about things you eat and drink.

How often do you eat fruit?

1. Every day
2. Most days
3. Some days
4. Rarely
5. Never

How often do you eat vegetables, not including potatoes and chips?

1. Every day
2. Most days
3. Some days
4. Rarely
5. Never

How often do you drink fizzy drinks, for example coke, lemonade, Fanta and Irn Bru?

1. Every day
2. Most days
3. Some days
4. Rarely
5. Never

Thinking about your favourite activities, what is your favourite activity to do in school and when not at school?

My favourite school activity is

……

……

……

……

……

……

My favourite activity when not at school is

……

……

……

……

……

……

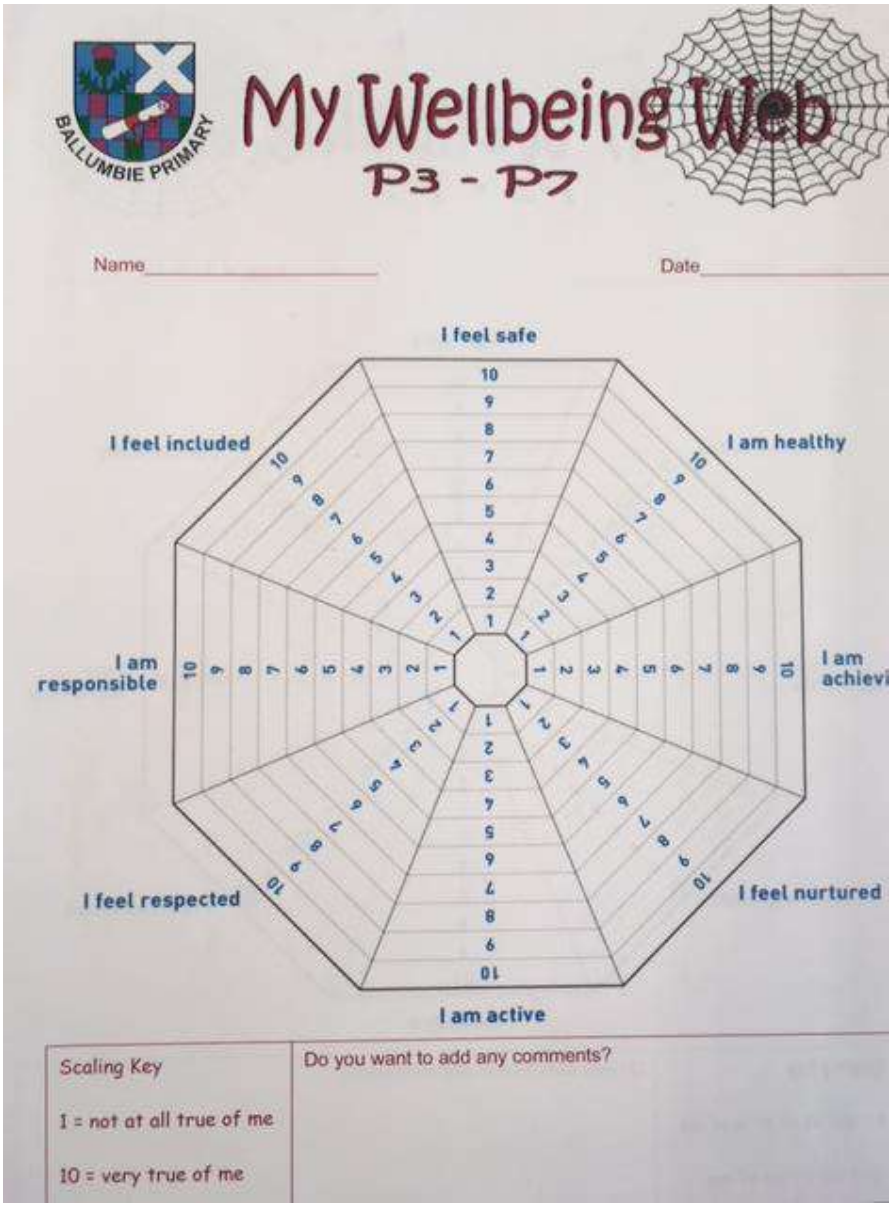
……

……

Well done! You have finished the questionnaire. Thank you for helping us by telling us a little bit about you!

If anything in this questionnaire has made you feel worried or upset, you can speak to any teacher or Child Protection Officer in school, who will be able to help you.

Appendix 8. Wellbeing Web



Appendix 9. Teachers' Survey

I am head teacher/ class teacher/ teaching assistant of class …….

at (school)……

My name is Dawn Short and I am the researcher employed to evaluate the success of the Dundee Bairns Tea Club Project. As such, I would like to ask for your opinions and perceptions of how participation in the Tea Club has impacted children in your class.

Thinking of the children in your class who participated in the Tea Club, do you perceive any improvements in the following:				
1. School attendance				
Great improvement	Some improvement	Stayed the same	A little worse	Much worse
2. Attitude towards school				
Great improvement	Some improvement	Stayed the same	A little worse	Much worse
3. Behaviour in class				
Great improvement	Some improvement	Stayed the same	A little worse	Much worse
4. Engagement with learning opportunities				
Great improvement	Some improvement	Stayed the same	A little worse	Much worse
5. Literacy skills				
Great improvement	Some improvement	Stayed the same	A little worse	Much worse
6. Numeracy skills				
Great improvement	Some improvement	Stayed the same	A little worse	Much worse
Thinking of the project overall, what do you think has been the impact on the participants?				
Any other comments you would like to make about the Tea Club?				

If you have any questions, please contact me (d.short@abertay.ac.uk, 01382 308509).