

New
Philanthropy
Capital

Feelings count

July 2009

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**Measuring children's subjective well-being
for charities and funders**



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‘Happiness, Happiness
The greatest gift that I possess...
When you get to measuring a man's success
Don't count money, count happiness.’

An extract from *Happiness* sung by Ken Dodd, 1964.

Summary

How happy would you say you are today? Four out of ten? Eight? It seems strange to put a number on a feeling. That's why many charities working to improve well-being and make children happier struggle to measure their impact. But NPC believes you can put a number on a feeling and has developed a questionnaire to help charities and funders measure their impact on children's well-being.

Proving impact

There is a growing demand for charities to measure, manage and communicate their impact. If charities do not measure the success of their services, the most effective approaches cannot be scaled-up, the least effective cannot be challenged, and maximum benefit cannot be achieved.

Some charities have objective outcomes that are relatively easy to recognise and capture, like improved literacy or reduced offending. Yet many others achieve important yet intangible outcomes, such as improving family relationships or self-esteem.

There is currently no method for measuring these subjective outcomes that meets the needs of charities. Yet well-being is increasingly recognised by government as being vital for improving policies and services.

Some charities say it is impossible to put a number on their work. But NPC thinks these organisations should not shy away from measuring their impact because it is challenging.

NPC wants to help charities overcome these challenges and has developed a questionnaire to do just that. It will allow charities to finally put a number on how a child feels and will enable them to prove their impact in a way never done before.

The questionnaire

NPC, working in partnership with The Children's Society, has pulled together existing research to design a questionnaire that measures seven aspects of 11 to 16 year old's subjective well-being. These are:

- self-esteem;
- resilience;
- emotional well-being;

- peer relationships;
- family relationships;
- satisfaction with school; and
- satisfaction with local community.

The questionnaire is answered by the child. Charities can ask the children they work with to complete the questionnaire before and then following an intervention to see if their well-being has improved.

The Children's Society, a large UK children's charity, is conducting a national research programme into children's well-being and the best ways to measure it, including a nationally-representative survey of children's well-being. Data from this survey will provide a baseline of well-being so that charities can place their results in a national context.

The right tool for charities

In order that the well-being questionnaire is the best possible tool for charities it must be both academically robust but also practical for charities to use on the ground.

NPC is therefore rigorously piloting the questionnaire with five children's charities providing different interventions, including counselling, after-school clubs, anti-bullying workshops, outward bound courses and support for young carers.

Data from the pilots is being used to check that the questionnaire is reliable, valid and sensitive, using relevant statistical tests. Feedback from the charities will assess whether it is easy to use, and inform guidelines for using the questionnaire.

The results

This report describes the interim findings from two of the charity pilots. The data proved that the well-being questionnaire is sufficiently reliable and valid, except for the peer relationships scale, which will require further development before it is launched.

The well-being questionnaire is also sensitive to change and is proving its potential as a highly useful tool for schools and charities:

The Outward Bound Trust provides outdoor experiences to develop young people. The questionnaire showed that

the Outward Bound course® improved children's self-esteem, resilience and emotional well-being.

The Place2Be provides counselling to children in schools. The questionnaire showed that children who used The Place2Be's counselling services tended to be less happy than others about their relationships with family and friends.

NPC will continue refining and retesting the questionnaire, using data from the ongoing pilots, to ensure it is of the highest possible quality before it is launched.

Launching the questionnaire

NPC plans to launch the final version of the subjective well-being questionnaire online in October 2009. The questionnaire will be launched as part of a 'well-being toolkit'. The initial toolkit will contain the following:

The questionnaire: This will be freely available for registered charities to download.

Guidelines: The toolkit will contain detailed advice and information on designing an evaluation and using the questionnaire.

A user forum: Members will receive emails containing advice and news, and the website will act as an interactive forum for users to share experiences and ideas.

NPC is also exploring the possibility of providing training, analysis services and sophisticated software that will make the questionnaire as easy as possible for charities and funders to use.

NPC hopes the well-being questionnaire will become the best and most recognised method for capturing subjective outcomes in the voluntary sector.

The questionnaire will help charities to demonstrate their full impact, attract funding, improve their services and ultimately ensure the maximum benefit for the children with whom they work.



Photo credit: Pyramid

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Introduction

Subjective well-being refers to those intangible aspects of life, such as good peer and family relationships, self-esteem and resilience, that contribute to a child's happiness.

How happy would you say you are today? Four out of ten? Eight? It seems strange to try and put a number on a feeling. Making children happier is the aim of many charities. As a result many charities working with children struggle to measure their full impact.

NPC believes that it is vital for charities to measure their impact. If they do not, the most effective approaches cannot be scaled-up, the least effective cannot be challenged, and the maximum benefit for the children that charities work with cannot be achieved.

In order to measure their impact, charities need the right tools at their fingertips. In partnership with The Children's Society, NPC has developed a questionnaire that will finally allow charities to put a number on a child's feelings and capture their full impact in a way never done before.

The questionnaire measures improvements in different aspects of 11 to 16 year olds' subjective well-being, such as self-esteem, resilience and peer and family relationships.

This report introduces the well-being questionnaire to potential users, including charities and funders. It describes the reasons behind the project, the development of the questionnaire and pilots, the interim findings and plans for launching the questionnaire online in October 2009. We welcome your comments and suggestions on the questionnaire and its future development.

Box 1: On the bright side

NPC's report *On the bright side*¹ describes the stages of building and testing the first questionnaire, which contained both subjective and objective well-being measures. *On the bright side* opened the discussion on how and why charities should measure well-being. The new questionnaire focuses solely on subjective well-being, for the following reasons:

- Subjective outcomes are intangible and harder to measure than objective outcomes. Yet only by measuring both subjective and objective well-being can charities prove their full impact.
- There is currently no measure of subjective well-being that meets all the needs of charities. Yet subjective well-being is increasingly recognised by central and local government as vital for improving policy and services.

While the questionnaire focuses on subjective well-being, we anticipate that charities will use it alongside other objective measures of impact, such as academic attainment or attendance.

Subjective well-being and charities

In this report, 'subjective well-being' refers to those intangible aspects of life, such as good peer and family relationships, self-esteem and resilience. These qualities contribute to a child's happiness, and are only really experienced from the child's own perspective.

The main aim of children's charities is often to improve the happiness and quality of life of the children they work with. There are many different things that affect a child's happiness, such as having a good circle of friends, having a loving family, feeling confident, and enjoying school and free time.

Charities work hard to improve different aspects of a child's life, yet they struggle to prove their impact. They typically measure objective outcomes, such as academic attainment or attendance rates, because these are easier to recognise and capture than subjective well-being outcomes like self-esteem (see Box 1).

Yet objective outcomes do not tell the full story. Just because children get good grades at school does not necessarily mean they enjoy it. Feelings are hard to quantify, but they must be understood if we are to comprehend the full effect a charity has on a child's happiness.

The Outward Bound Trust is an educational charity that uses outdoor challenges to help develop young people, using adventurous activities to improve self-esteem, motivation and interpersonal skills. The charity receives positive feedback yet struggles to prove the full extent of its impact on children's lives. By measuring subjective well-being it will be able to show which areas of well-being its activities improve, such as self-esteem, resilience and relationships. Staff will also be able to see which children they are working better with, and adapt their services accordingly.

Why measure subjective well-being?

NPC wants to help create a world where charities and funders are as effective as possible in changing people's lives and tackling social problems. If charities can measure well-being, then as well as being able to improve their services, they will also be able to prove to funders the full extent of their impact.

Philanthropic and statutory funding can then be channelled to the most successful interventions and away from ineffective or even damaging interventions.

Charities can only measure their full impact if they can put a number on a feeling. It is therefore vital that they measure subjective well-being. NPC believes that measuring subjective well-being would have the following benefits for charities:

Allow charities to prove their full impact:

Measuring subjective well-being captures the important yet intangible benefits of charities' work that might otherwise be overlooked.

Improve how charities are run: Understanding their broader impact can help charities to improve, addressing their weaknesses and building on their strengths. It can also provide the basis for sharing lessons with other organisations.

Communicate benefits to funders: Information on well-being can be used by both statutory and voluntary bodies to make funding decisions. Funders can appreciate the impact that charities have beyond that captured by a narrow measurement of results.

Deepen understanding of subjective well-being: A multi-dimensional scale will allow a charity to see where it is having the most impact on a child's life. With enough data, it will be possible to see how an increase of well-being in one area (such as family relationships) might contribute to subjective well-being in other areas (such as self-esteem).

Capture the child's perspective: Children's charities have always believed the needs of the child should come first, yet they have found it hard to capture the child's perspective quantitatively. Behavioural proxies can be used to estimate children's well-being, but we wanted to produce a tool that actually puts a number on how the child feels. This will be especially useful for charities applying for statutory funding, as local and central government policy is becoming more child-centric.

Allow charities to capture positive outcomes: Many existing methods used by children's charities focus on negative outcome indicators such as the absence of mental health problems or reduction in negative behaviour like truanting or offending. However, there is a move by charities and policy-makers to focus more on positive well-being outcomes. We wanted to produce a tool that finally allows charities to prove that they promote positive well-being, as well as just preventing the negative.

There is a pressing need for a tool designed so that children's charities can measure subjective well-being. No measure of well-being currently meets all the needs of children's charities. Most charities do not measure well-being, and those that do use a variety of incomparable and often untested scales that only measure certain aspects of well-being.

How to measure subjective well-being

NPC wants charities to achieve impressive results and to raise their accountability to funders and to themselves, and we want to help them to achieve this.

NPC has therefore developed a comprehensive, multi-dimensional questionnaire that measures different aspects of 11 to 16 year olds' subjective well-being. The seven aspects of subjective well-being measured by the questionnaire are those deemed most relevant to children and the charities that work with them. They are:

- self-esteem;
- resilience;
- emotional well-being;
- peer relationships;
- family relationships;
- satisfaction with school environment; and
- satisfaction with local community environment.

NPC has worked closely with The Children's Society, a large UK children's charity, in selecting the best ways to measure these aspects of well-being. We want the questionnaire to be academically robust as well as practical for charities to use. We are therefore rigorously piloting the questionnaire with five different children's charities.

In addition, NPC is going to standardise the questionnaire using data collected by the Children's Society as part of its nationally-representative survey of children's well-being. This will mean that charities can compare their results with national levels of well-being, put their work in context and prove that they are working with particularly disadvantaged children who have low levels of well-being.

NPC intends to launch the final questionnaire in October 2009, when it will be freely available online for charities to download. This report introduces the well-being questionnaire to potential users, including charities and funders.

NPC wants to help create a world where charities and funders are as effective as possible in changing people's lives and tackling social problems.

Report structure

Chapter 2 gives some background to the concept of well-being and how it can be measured. It also explains the difference between subjective and objective well-being.

Chapter 3 describes how we designed the subjective well-being questionnaire. It also explains NPC's partnership with The Children's Society.

Chapter 4 describes NPC's methodology for testing the validity, reliability, sensitivity and practicality of questionnaire. It also covers the design of the five charity pilots.

Chapter 5 reports the interim findings coming out of two of the charity pilots. The results show that the questionnaire is generally robust, practical and useful.

Chapter 6 describes our plans for launching the questionnaire in October 2009 as part of a 'well-being toolkit'.



Photo credit: The Outward Bound Trust

Background

GDP by itself is an inadequate measure of welfare. Since the 1940s, GDP in the UK has increased yet the well-being of the population has remained unchanged. As a result, there has been growing interest in exploring what it is that makes people happy. This comes with a need to measure.

This chapter gives some background to the overall concept of well-being, and explains the difference between subjective and objective well-being.

Objective well-being refers to those environmental factors such as wealth, health and employment, which are associated with a good life. Subjective well-being refers to the feelings of happiness or life satisfaction experienced by people, despite their objective circumstances.

What is well-being?

What is well-being? And how do we achieve it? Philosophers, policy-makers, economists, doctors, psychologists and sociologists have all grappled with these questions.² More than 2,000 years ago, Aristotle poignantly defined the constituent parts of happiness as:

*'good birth, plenty of friends, wealth, good children, plenty of children, a happy old age, and also such bodily excellences as health, beauty, strength, large stature, athletic powers, together with fame, honour, good luck and excellence.'*³

Since Aristotle, different schools of thought have focused on different aspects of well-being. Renowned economists such as Adam Smith⁴ have equated wealth with happiness, arguing that the former is instrumental in achieving the latter.⁵ Medical practitioners have focused on quality of life and the absence of disease and infirmity.⁶ Sociologists have looked at life satisfaction and psychologists at mental health and emotional well-being.

In all these fields, various terms including 'quality of life', 'happiness' and 'life satisfaction' have been used to refer to well-being. However, modern definitions of well-being unite all these strands and agree on two important points:

1. Well-being is multi-dimensional: It incorporates all those aspects of life that we need to make us happy, including the physical, material and social.²

2. Well-being is a positive concept: It is not merely the absence of negative aspects of life such as illness or poverty, but must also account for the presence of all the things one needs to lead a good life, such as good friendships and self-esteem.

In 1948, the founders of the World Health Organisation defined health as *'physical, mental and social well-being, not merely the absence of disease and infirmity'*.⁷ Well-being has also been defined as a *'multi-dimensional construct incorporating psychological, physical and social dimensions'*.⁸

These broad definitions underpin today's concept of well-being and fit well with the work that charities do—they are often trying to have a positive impact on multiple aspects of children's lives.

What is the difference between subjective and objective well-being?

Whether a person has all those things that are meant to make a person happy—such as good health, money and friends—and whether they actually feel happy or satisfied with life, are two very different things. This is the difference between objective and subjective well-being.

Research has shown that happiness is related to objective circumstances. For example, there is a close relationship between wealth and well-being up to a certain threshold.⁹ However, objective circumstances are not enough to explain happiness fully.

Happiness is also dependent on subjective well-being—people's personal values, views and assessments of their life circumstances, including, for example, self-esteem and feeling connected to one's community.¹⁰

Well-being and policy

In the eighteenth century the philosopher Jeremy Bentham proposed that the end goal of public policy should be to maximise the sum of happiness in society.¹¹

In the past, governments have tended to focus on improving objective well-being by increasing GDP. They have also aimed to improve factors such as employment levels and literacy rates, and to reduce violent crime.¹²

Health is physical, mental and social well-being, not merely the absence of disease and infirmity.

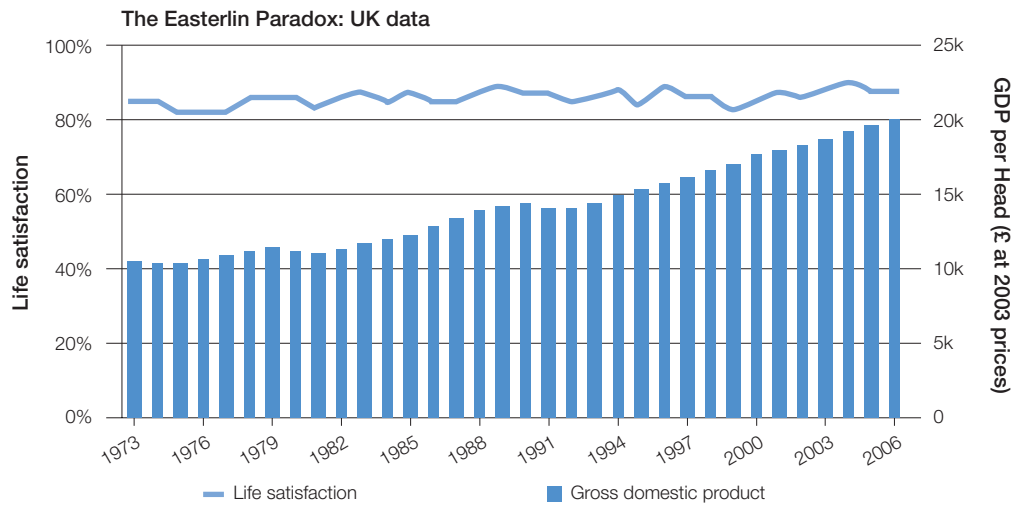
World Health Organisation, 1948

As Western societies have got richer, their people have become no happier... this devastating fact should be the starting point of all discussion on how to improve our lot.

Lord Layard

Governments have started making policies aimed specifically at improving subjective well-being.

Figure 1. GDP and well-being



However, economists and policy-makers have realised that GDP by itself is an inadequate measure of welfare. Since the 1940s, GDP has increased while the well-being of the population has stagnated. Figure 1 shows the situation in the UK since 1973.¹³

Known as the Easterlin Paradox, this situation shows that simply encouraging economic growth is not enough to ensure increased levels of well-being once basic needs are met.¹⁴ With this realisation, governments have started making policies aimed specifically at improving subjective well-being.

Box 2: Every Child Matters

The Every Child Matters (ECM) framework sets out the government’s national strategy for improving services to ensure maximum benefits and minimum risk to children and young people in England. The framework was developed in response to the 2003 green paper *Every Child Matters* published in the wake of the death of Victoria Climbié.¹⁵

Central to ECM are five common well-being outcomes for children, which were selected following extensive consultation with children and young people. These are legally entrenched in the Children Act 2004. They are:

- be healthy;
- stay safe;
- enjoy and achieve;
- make a positive contribution; and
- achieve economic well-being.

Further detail of what exactly the five ECM outcomes mean is given in the ECM Outcomes Framework. The framework includes subjective outcomes such as being *‘mentally and emotionally healthy’*, *‘enjoying school’*, *‘developing positive relationships’* and *‘developing self-confidence and successfully dealing with significant life changes and challenges’*.¹⁵

NPC has linked the seven aspects of subjective well-being measured by the well-being questionnaire to the relevant ECM outcomes in a guide for charities and funders. We will publish this document online when the questionnaire is launched so that charities using the well-being questionnaire can see how it is relevant within the current commissioning environment.

We will also publish documents outlining how the well-being questionnaire can be applied within other relevant outcomes or policy frameworks, to ensure that it is as useful as possible for charities and funders.

The 2000 Local Government Act gave English local authorities, the largest type of funder of charities, the power to commission services on the basis of improved well-being. More recently, the Every Child Matters framework (2004) laid out the government’s strategy for improving children’s well-being, and specified a number of subjective well-being outcomes that should be central to children’s services (see Box 2). The Welsh Assembly Government has a similar programme called Children First.

The Scottish Government’s National Programme for Improving Mental Health and Well-being was launched in 2001, with the remit of shaping, funding and supporting key initiatives to promote the well-being of different groups, including children and young people. The 2004 Curriculum for Excellence redefines the role of education in Scotland, with schools now expected to promote not only learning but also positive psychology, confidence and community participation.

With this increasing emphasis on well-being in policy and service delivery comes the urgent need to measure it accurately.

Measuring well-being

Because of the different nature of objective and subjective well-being, different methods are used to measure them. Most attempts to measure well-being use large sets of indicators that include both objective and subjective measures (see Box 3).

Measuring objective well-being usually consists of collecting data on environmental factors, such as employment or crime rates. Measuring subjective well-being is more controversial.

The problem is that feelings, like happiness, anger or enjoyment, are notoriously intangible. You cannot see them, hold them or touch them. In the twentieth century, behaviourist psychologists like Pavlov and Skinner argued that you can never truly know or measure other people's feelings and that all we can do is study their behaviour.¹¹

For example, a common measure used by some charities is the **Goodman's Strengths and Difficulties Questionnaire (SDQ)**.¹⁶ This is a behavioural screening tool answered by parents or teachers that captures such things as conduct disorder and hyperactivity. However, this behavioural proxy does not actually capture how children feel—it only looks at how they behave.

Psychologists and social scientists are now returning in strength to the study of feelings, showing that it is indeed possible to measure them, compare them and explain them.

Methods for measuring subjective well-being

Neuroscientists have shown that what people say about how they feel corresponds closely to actual levels of activity in different areas of the brain.¹¹ So you can measure subjective well-being or happiness simply by asking people how they feel.

Various methods have been developed for measuring aspects of subjective well-being. They tend to be divided as follows:

Global vs specific measures: Global measures of well-being ask respondents about their overall happiness or life satisfaction. Specific measures ask about a particular aspect of well-being or a person's satisfaction with an area of life. Examples include happiness with family relationships, whether you enjoy school or how self-confident you are.

Box 3: Well-being indicator sets

Governments, international institutions and other bodies often try to measure well-being at local, national or international levels using sets of indicators containing mostly objective measures.

Objective well-being indicators are usually collected via administrative records or databases held by bodies including governments, local authorities, schools, hospitals and youth offending teams. Some objective indicators are collected through surveys. The British Crime Survey, for example, is the primary source of data on true victimisation rates in the UK. However, it also contains some subjective measures, such as public confidence in the police and fear of crime.¹⁸

UNICEF publishes an annual *State of the World's Children* report.¹⁹ This largely focuses on objective indicators of well-being, such as infant mortality, immunisation rates, education, literacy and wealth. But it also contains some subjective measures from the World Health Organisation's *Health Behaviour in School-Aged Children* survey, which asks questions about the quality of children's relationships with their parents and friends.²⁰

Similarly, the English National Indicator Set contains both subjective and objective measures of well-being. This multitude of data allows policy-makers, practitioners and academics to track outcomes and make judgements on what works in improving public well-being.

Single-question vs multiple-question

measures: Multi-question measurement scales ask a number of questions on the same subject and therefore tend to be more reliable than a single question. However, in most large surveys, single questions are used as they are quicker and easier to administer.

There is a growing consensus that measures of subjective well-being, including global measures ('overall how satisfied are you with your life?'), do accurately reflect individuals' feelings about their own lives.¹⁷

Table 1 outlines the different types of subjective well-being measures that are available. It shows that while many measures exist, none meet all the needs of charities working with children. This is why NPC decided to pull together existing research to design a subjective well-being questionnaire specifically for charities.

Most attempts to measure well-being use multi-dimensional sets of indicators including both subjective and objective measures.

Table 1: Existing methods for measuring subjective well-being

Type of measure	Explanation	Advantages	Disadvantages	Examples
<p>Single questions measuring global subjective well-being</p>	<p>These are single question self-report items that aim to capture global happiness or satisfaction with life. They are often used in national and local surveys to look at time trends, to compare subjective well-being of people across countries and demographics, and to draw conclusions that feed into policy.</p> <p>Life satisfaction measures tend to reflect a more stable trait, whereas happiness measures are more short term and dependent on mood.²¹</p>	<ul style="list-style-type: none"> • Quick and easy to administer. • Shown to be reliable and valid, and to correlate positively with objective measures of well-being such as health, leisure time and GDP up to a certain threshold.^{11, 22} • Recent research suggests that subjective well-being can be changed in the long term and people do not always revert to a genetically-determined set level of happiness.²³ This means it is possible to look at changes over time in global subjective well-being. 	<ul style="list-style-type: none"> • There is some controversy around whether you can improve subjective well-being or happiness in the long term. The 'hedonic treadmill effect' or adaptation theory argues that people tend to eventually revert to a genetically-determined level of happiness whatever the change in their circumstances.¹⁴ • Global measures cannot explain domains of subjective well-being and how these contribute to life satisfaction. 	<ul style="list-style-type: none"> • Cantril's ladder.²⁴ <i>'If the top of the ladder '10' is the best possible life for you, and the bottom of the ladder '0' is the worst possible life for you, where on the ladder do you feel you stand at the moment?'</i> • US General Social Survey.²⁵ <i>'Taken all together, how would you say things are these days—would you say that you are very happy, pretty happy, or not too happy?'</i> • World Value Survey.²⁶ <i>'On a scale of 1 to 10, overall how satisfied are you with your life these days?'</i>
<p>Single questions measuring a specific aspect of subjective well-being</p>	<p>These are single questions, often used in surveys to find out how people feel about an aspect of their life. They are used to capture subjective well-being in a specific domain or area of interest, and can be used to direct policy and service provision.</p>	<ul style="list-style-type: none"> • Quick and easy to administer. • Shown to be reliable and valid when used with large samples and to measure trends in aspects of well-being over time and across demographics. 	<ul style="list-style-type: none"> • A single question asking about an aspect of well-being is not as reliable as a multi-question measure, as there is more room for error. • Not suitable for use with small samples. 	<ul style="list-style-type: none"> • The Families and Children Survey.²⁷ <i>'How satisfied or dissatisfied are you with the parks and playgrounds in your local area?'</i> • The Tellus Survey.²⁸ <i>'Do you enjoy school always, sometimes or never?'</i>

Type of measure	Explanation	Advantages	Disadvantages	Examples
Multi-question scales measuring global subjective well-being	<p>These are a series of questions designed to capture overall subjective well-being, affective happiness or satisfaction with life more accurately than single-item global measures.</p> <p>They tend either to measure the more stable state of general life satisfaction, or affective happiness.</p>	<ul style="list-style-type: none"> Designed to be more robust, reliable and accurate than single-item measures of life satisfaction or happiness, particularly with smaller samples. 	<ul style="list-style-type: none"> They take a long time to administer. There is mixed evidence that multi-item global measures are much more reliable than single-item measures.²⁹ Measures looking at overall happiness or life satisfaction do not explain the underlying dimensions. 	<ul style="list-style-type: none"> The Satisfaction with Life Scale.³⁰ A five-question scale measuring global cognitive judgement of one's life. The Day Reconstruction Method.³¹ Assesses how people spend their time and how they experience these activities. The Children's Happiness Inventory.³² A multi-item subjective well-being measure for 8 to 15 year olds.
Multi-question scales measuring a specific aspect of subjective well-being	<p>There are numerous scales developed by psychologists and sociologists to measure reliably and accurately one or more specific aspect of well-being. These range from scales measuring satisfaction with aspects of life, to scales measuring internal states such as self-esteem, resilience or anxiety.</p>	<ul style="list-style-type: none"> Because these are more reliable than single items they are better for measuring aspects of well-being accurately with small samples. If the right combination of scales are selected these can together give a good multi-dimensional picture of different aspects of a child's subjective well-being. When captured alongside a global measure they can help to explain what contributes to overall life satisfaction. 	<ul style="list-style-type: none"> It is time-consuming to develop and properly test a reliable and valid multi-question measurement scale. Because they often contain a large number of items they can take long to administer. 	<ul style="list-style-type: none"> The Multidimensional Life Satisfaction Scale.³³ Measures satisfaction with different aspects of life including family and friends. The Psychological Resilience Scale.³⁴ A 14-question scale measuring ability to cope with stress and difficulties. The Self-Description Questionnaire.³⁵ Multi-dimensional questionnaire measuring different aspects of self-concept including self-esteem.

Designing the questionnaire

We needed to make sure not only that we were measuring the right subjective outcomes for children's charities, but also that we were measuring them in the best way.

This section outlines the development of the charity questionnaire, from deciding which subjective outcomes should be measured to selecting the best measurement scales and adapting them for the purpose of the questionnaire.

In designing the questionnaire, NPC has partnered with The Children's Society, a large UK children's charity. The Children's Society is conducting a national research programme into children's well-being and the best ways to measure it, including a nationally-representative survey of children's well-being. Data from this survey will provide a national baseline so that charities can put their results in context.

A subjective questionnaire for children

When creating the subjective well-being questionnaire, we decided to focus on children aged 11 to 16 to avoid literacy problems. There were two important questions that we needed to answer before we could develop the questionnaire:

- What should we measure?
- How should we measure it?

We needed to make sure not only that we were measuring the most relevant subjective outcomes for children's charities, but also that we were measuring them in the best way.

What should we measure?

Defining objectives

The purpose of the well-being questionnaire is to allow charities to evaluate their services for children across a range of positive subjective well-being outcomes. The questionnaire must therefore fulfil the following three objectives:

- The questionnaire should measure subjective, not objective well-being.
- The questions must be relevant to both children and the charities that work with them.
- The questionnaire must be comprehensive and multi-dimensional.

The subjective outcomes

We wanted the questionnaire to capture all aspects of subjective well-being that are both relevant to charities' work with children, and sensitive to change. Table 2 shows the seven aspects of subjective well-being that were deemed most relevant to charities working with 11 to 16 year olds. These were selected through review of the child well-being literature and discussion with charities.

As well as the seven aspects of subjective well-being, we also wanted to include a global subjective well-being measure so we could contribute to the literature on what works in improving the overall happiness of children.

Table 2: Aspects of subjective well-being measured by the questionnaire

Domain	Aspect of well-being
Global subjective well-being	
Self	<ul style="list-style-type: none"> • Self-esteem • Resilience • Emotional well-being
Relationships	<ul style="list-style-type: none"> • Friends • Family
Environment	<ul style="list-style-type: none"> • School • Community

Most of the seven aspects of well-being measured by the subjective questionnaire relate to one of the domains in NPC's original questionnaire (see Box 4).



Photo credit: IntoUniversity

Many charities say that improving self-esteem is an important part of the work they do with children. We therefore wanted to include a separate measure of self-esteem, which would loosely make up a domain called 'self', alongside resilience and emotional well-being.

The 'relationships' domain aims to capture the child's feelings about the quality of his or her relationships with family and friends. The 'environment' domain is concerned with the child's feelings of satisfaction or happiness with his or her school and local community or neighbourhood.

These domains are different from the ones described in the report *On the bright side*. They are slightly broader and include two or more of the original domains. A domain is simply a way of grouping aspects of well-being in a meaningful way, and is useful for descriptive purposes.

How should we measure it?

Defining objectives

It is vital that the questionnaire is reliable and valid, but also practical. We wanted to strike a balance between being academically rigorous and ensuring that the questionnaire is easy for charities to use on the ground.

The questions for measuring the subjective well-being outcomes were therefore selected with three objectives in mind:

- The questions must be reliable, valid and sensitive to change.
- The questionnaire must be short and easy to administer.
- The questionnaire must be standardised using a national baseline.

The multi-item measurement scales

As already discussed, measuring subjective or abstract concepts presents a challenge. The response to a non-factual question can be easily affected by minor changes in wording.

The best way to measure a feeling or aspect of subjective well-being is to use a multi-item measurement scale. A well-constructed multi-item scale will typically be more reliable than a single question asked on the same topic.³⁶

However, high quality multi-item measurement scales are difficult to design. Each question must be developed with respect to question design principles³⁷ and the scale must be thoroughly tested with the appropriate age group. Rather than designing the seven scales

Box 4: The domains in NPC's first questionnaire

The first questionnaire developed by NPC contained both subjective and objective measures. The questions were divided into 'domains', which describe the different areas of well-being being measured.

These domains were selected based on a review of the literature and an understanding of what is important for children and charities.¹ The domains covered in the first questionnaire were:

- physical well-being;
- psychological well-being;
- behaviour;
- school environment;
- relationships with family;
- relationships with friends;
- resilience;
- living environment;
- global subjective well-being; and
- material well-being.

Because charities struggle most to measure subjective outcomes, we chose to focus on this. The new questionnaire does not include the domains of material well-being or more objective and behavioural outcomes.

Hard outcomes and behavioural measures can be captured alongside subjective well-being by asking parents, teachers, or the children themselves, and by keeping a database. The subjective well-being questionnaire is not designed to be used in isolation, but rather to complement other methods.

from scratch, we decided it would be more efficient to adapt existing measurement scales.

There are already a large number of reliable and validated measurement scales available that have been designed by psychologists and sociologists to measure different aspects of subjective well-being. We wanted to pull together existing research to create a high quality multi-dimensional questionnaire that meets all the needs of charities.

In order that the questionnaire is also easy for charities to use, we created shortened versions of the existing scales. Once the scales had been adapted, we piloted them with five children's charities. We worked closely with The Children's Society when selecting the best scales to use.

A partnership with the Children's Society

The Children's Society, a large UK children's charity with an academic research team, is conducting a programme of research into children's well-being. This research is designed to complement the charity's Good Childhood Inquiry.³⁸

We wanted the questionnaire to be academically rigorous but also practical for charities to use.

Box 5: NPC's partnership with The Children's Society: A case study on increasing information flow within the voluntary sector

NPC wants to help create a world where results information flows freely between charities and funders. Sharing methods and results needs to happen both within and between charities in order to:

- prevent replication of research and ensure effective use of resources;
- ensure best practice in measurement (where research on tools has been conducted this needs to be disseminated);
- ensure that smaller charities benefit from the research done by larger charities that have greater expertise and capacity;
- facilitate comparison between charities, interventions and methods; and
- ensure that any research conducted provides the greatest possible benefits to the charitable sector and its beneficiaries.

The Children's Society has excellent skills, expertise and capacity to measure results. It has a national research team that is carrying out a programme of research into what makes a good childhood—The Good Childhood Inquiry.

Yet despite this expertise, other charities in the sector are not benefiting from the research done by The Children's Society as much as they could. A partnership with The Children's Society has enabled NPC to facilitate information flow and maximise the impact of existing research. In particular, the partnership has enabled NPC to:

- ensure the charity well-being questionnaire is of the highest possible quality;
- provide a national baseline of child well-being with which children's charities can compare their results; and
- act as a conduit through which information on measuring well-being could flow from The Children's Society and other sources to charities, through the development and eventual marketing of a charity well-being 'toolkit'.

Projects such as this are at the heart of what NPC aims to achieve. This partnership is an excellent example of where NPC, by working with existing bodies, scaling-up research, and increasing the flow of information within the charitable sector, can have real impact and ensure positive change.

As part of its programme of research, The Children's Society has conducted a nationally-representative survey of approximately 5,000 10 to 15 year olds in England. The survey is designed to:

- establish a self-reported index of children's well-being; and
- establish a baseline for future repeat surveys, which will measure trends in children's well-being.

Because this is a national survey to be conducted every two years, the questionnaire is long. It includes items on many different aspects of well-being, as well as some objective measures. It would not be suitable for use by charities.

Because of the good relationship between the research teams at NPC and The Children's Society, we decided to form a partnership to maximise the value of both organisations' work (see Box 5).

We worked closely in designing the charity well-being questionnaire. During its survey development process, The Children's Society conducted research into the best scales that exist to measure different aspects of well-being. The charity questionnaire included shortened versions of the scales that were deemed the most reliable and valid for this age group.

All questions in the well-being questionnaire have either already been included in The Children's Society's national survey or will be included in future rounds of the survey. This will provide a national baseline so that charities can put their results in context.

The importance of a national baseline

Although the purpose of the questionnaire is to evaluate charity interventions rather than to diagnose individual children, it is still very useful for charities to frame their results using the national context.

Scores for a group of children will be combined to give an average score for each aspect of well-being. Scores can then be compared before and after the intervention to see where there are changes.

NPC can use The Children's Society national dataset to find out what the national average is for each aspect of subjective well-being. Raw scores are not meaningful without knowing where the centre of the scale is. We will be able to use the national distribution of scores to standardise the questionnaire. As a result a single score will be meaningful and changes in well-being at the top and bottom of the scale can be compared.

Having a national baseline will also allow charities to prove that they are working with children who have particularly low levels of well-being, and that they are targeting the most disadvantaged groups.

The questionnaire

Table 3 shows the different aspects of the well-being questionnaire measured by the questionnaire and the original authors.*

Shortening the scales

Each scale contains a series of first-person statements that the child must rate according to how much he or she agrees or disagrees that the statement reflects his or her life at the moment. We did not want the questionnaire to be too long or arduous for children to complete, so it could not contain more than 50 questions or statements.

* We contacted the authors of each scale to request their consent for us to use and adapt their scales for the charity questionnaire. Consent was given in all cases except for the emotional symptoms sub-scale of Goodman's SDQ.¹⁶ Copyright dictates that the five scales must always be used together, even when the individual scale is being used for evaluation rather than diagnosis. At the time of writing, we are piloting two alternative scales to measure emotional well-being, one developed by Achenbach^{39, 40} and one developed as part of the Kidscreen-52 questionnaire.^{41, 42} The Goodman emotional symptoms sub-scale will not be included in the final questionnaire when it is launched.

All the scales were shortened to five items, except for Marsh's self-description questionnaire, which has ten items and is used in its entirety to measure self-esteem. This is because improving self-esteem is a common and important outcome for many children's charities. We felt it warranted including the full scale to ensure it is measured as reliably as possible.

The statements included were selected on the basis of The Children's Society pilot data and a judgement of which were most appropriate. The shortened scales needed to be reliable, but also to reflect a valid range of statements that cover the aspect of subjective well-being being measured. For example, we wanted the family scale to include statements on the quality as well as the quantity of time spent with parents or guardians.

Answer categories

The DeVellis guidelines³⁷ set out the key principles of questionnaire design. These state that having a larger number of answer categories increases the sensitivity of a scale. Five or seven categories are optimal.³⁷ We wanted all the questions to have the same number of answer categories to make it easier for children answering the questionnaire.

Multi-item scales measuring the seven aspects of subjective well-being: All the scales measuring different aspects of subjective well-being have a five-category answer scale.* The five answer categories are:

1. strongly agree;
2. agree;
3. not sure;
4. disagree; and
5. strongly disagree.

Marsh's self-description questionnaire³⁵ and Huebner's multidimensional life satisfaction scale (MLSS)³³ all had five answer categories already. The questions taken from Goodman's SDQ¹⁶ to measure emotional well-being were therefore given five instead of three answer categories. The Wagnild and Young resilience scale³⁴ answer categories were reduced from seven to five.

The single-item subjective well-being measure: The global subjective well-being measure is different from the other scales because it is only one question. With single questions, the more answer categories the better. A large number of answer categories means the question will be more reliable and sensitive to change.³⁷ It is answered using a ladder which has rungs from 0 to 10.

Scoring

Raw scores are taken by adding up the answers for each of the items within a scale.

The self-esteem scale has ten items and the other scales have five items. This means that each of the scales is scored as follows:

- **Global subjective well-being:** One item, scored on a 0–10 scale.
- **Self-esteem:** Ten items with five answers, scored on a 0–40 scale.†
- **Other six scales:** Five items with five answers, scored on a 0–20 scale.

Standardised scores can be calculated from raw scores if the overall distribution of scores within the population is known. This report involves the analysis of raw scores only.

Positive and negative items

The DeVellis guidelines state that having the same number of positive items (such as *'my friends are great'*) and negative items (such as *'I wish I had different friends'*) increases the validity of the scale. However, negative items can be confusing, especially for younger respondents.

Traditionally, there has been a focus on negative measures of child well-being (such as the absence of mental health problems), but there is a growing trend towards focusing on more positive measures (such as having self-confidence).⁴³ The questionnaire therefore contains both positive and negative items, but more positive items than negative. We also piloted a version of the questionnaire that included additional negative items to see if this affected reliability (see Chapter 4).

Conclusion

NPC wanted to develop a questionnaire that was not only academically robust but also practical for charities to use.

Instead of designing the questionnaire from scratch, we maximised the potential of existing research. We selected the best subjective well-being scales with help from The Children's Society. These scales were then carefully adapted with the intention that they are brief enough for charities to implement easily, while remaining reliable and valid.

Once the questionnaire was designed, we arranged pilots with five children's charities to rigorously test that the questionnaire was reliable, valid and practical to use. The next chapter explains the pilots.

* This kind of scoring, known as a Likert scale, is common in subjective questionnaires.

† In the graphs in Chapter 5, the raw scores for self-esteem have been divided by two so that they can be shown alongside the results for the other six scales.

Table 3: The sources of the subjective well-being questionnaire

Subjective well-being		Explanation	Original source	Number of questions	National baseline
Domain	Aspect				
Subjective well-being		A global measure of a child's happiness or satisfaction with his or her life.	Cantril's ladder ²⁴	1	Yes
Self	Self-esteem	A child's evaluation or appraisal of his or her own worth. It is closely linked with self-confidence, and is important for a healthy, happy life.	Marsh's self-description questionnaire ³⁵	10	Yes
	Resilience	The positive capacity of people to cope with stress and difficulties. It is a particularly important protective factor to foster in children, enabling them to deal better with future negative events. It is associated with high self-esteem, interpersonal problem solving skills, and good relationships with adults.	Wagnild and Young's resilience scale ³⁴	5	No*
	Emotional well-being	The extent to which a child experiences depressive moods and emotions, as well as worries and other stressful feelings. Low scores are linked to anxiety and depression.	Goodman's SDQ ¹⁶	5	Yes
Relationships	Friends	The child's satisfaction with the quality and quantity of friendships both in and out of school.	Huebner's MLSS ³³	5	Yes
	Family	The child's satisfaction with family relationships, including the quality and quantity of time spent with parents or carers, and how well the family gets on.	Huebner's MLSS ³³	5	Yes
Environment	School	The child's satisfaction with the school environment, including how enjoyable and interesting it is, and how safe it feels.	Huebner's MLSS ³³	5	Yes
	Community	The child's satisfaction with his or her local area and the people in the community, as well as feelings of safety and satisfaction with local activities.	Huebner's MLSS ³³	5	Yes

* This scale was not included in the first national survey conducted by The Children's Society, but will be included in the next national survey.

Piloting the questionnaire

This section outlines the methodology for piloting the questionnaire. The questionnaire must pass various statistical tests to ensure that it is academically robust* as well as being practical for charities to use on the ground.

To ensure that the questionnaire is a good tool for measuring the impact of charities' work, we asked four important questions:

- Is the questionnaire reliable?
- Is the questionnaire valid?
- Is the questionnaire sensitive to change?
- Is the questionnaire practical for charities to use?

To answer these questions, we are piloting the questionnaire with five children's charities that provide interventions including counselling, after-school clubs, anti-bullying workshops, outward bound courses and support for young carers.

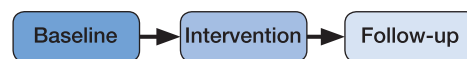
The aims of the pilots

The Children's Society has rigorously tested the full scales with a large pilot sample of children. However, as the previous chapter explains, the questionnaire uses adapted and shortened versions of the original scales, because they are quicker and easier for charities to use. We are piloting these versions to test that they still work well in shortened form, as well as to assess their suitability for use in charity evaluation.

The scales must be robust and sensitive to change. The questionnaire must be able to detect the impact of a variety of interventions, from those that are short or light-touch to more intensive or long-term programmes. The questionnaire must be appropriate for participants aged 11 to 16, and practical for charities to use. The aims of the pilots are therefore to:

- test the validity of the measurement scales used;
- test the reliability of the measurement scales used;
- test the sensitivity of the questionnaire with a variety of charity interventions; and
- test how practical the questionnaire is for charities to use, using case studies to illustrate the charities' experiences.

Each pilot involves using the questionnaire to take a baseline measure before the intervention. The questionnaire is used again to take a follow-up measure after the intervention or a period of time into the intervention, depending on the length and type of intervention. The baseline is compared to the follow-up to see if well-being has changed.



The pilot charities

NPC is piloting the subjective well-being questionnaire with five children's charities that provide services to children aged 11 to 16.

These charities each work with different aspects of well-being. The charities were selected because of the variety of interventions they provide, their good relationships with NPC, and their interest in measuring subjective well-being.

Table 4 shows the five pilot charities and the interventions being used to test the questionnaire, as well as the timing of the baseline and follow-up. Appendix 2 gives further details of the pilot charities, interventions and research design.



The questionnaire must pass various statistical tests to ensure that it is academically robust as well as being practical for charities to use.

* This means that it has passed statistical tests of reliability and validity used to assess the quality of measurement scales. All statistical terms and tests used in this chapter are defined in the glossary in Appendix 1.

Table 4: The pilot charities and interventions

Charity	Pilot intervention	Baseline	Follow-up
Barnardo's Large UK charity working with vulnerable children	Young Carers programme in Wales Questionnaire piloted in four areas	On referral to the Young Carers programme	After six months on the programme or on leaving
Beatbullying Leading UK charity that works to prevent bullying	The CyberMentors training programme Questionnaire piloted in four schools	Between a week and a month before the training	Between a week and a month after the training
The Outward Bound Trust Educational charity providing outdoor experiences to develop young people	The Outward Bound course® Questionnaire piloted in two schools	The week before the Outward Bound course	Between a week and a month after the Outward Bound course
The Place2Be Counselling charity providing emotional and therapeutic support for children in schools	The Place2Talk, group work and one-to-one counselling service in schools Questionnaire piloted in two schools	At the beginning of the autumn term	At the end of the summer term
The Prince's Trust Large UK charity working with children who are excluded from education, employment or training	The xl clubs programme Questionnaire piloted in four xl school clubs	In the autumn term	TBA

Implementing the pilots

In The Place2Be pilots, an NPC analyst went to the two schools to administer the baseline questionnaire in September 2008. In the other pilots, questionnaires were sent to the schools or project managers, along with sets of instructions for implementation.

The children complete the questionnaire in a quiet classroom or private setting.

Instructions

The children are told that the questionnaire is for us to see how they feel about different aspects of their lives and to see how they are doing. Before completing the questionnaire, they are told that:

- there are no right or wrong answers;
- we want them to be completely honest;
- we want them to think about their life as it is *now*;
- their answers will not be shown to anyone and their name will not be included on the paper where they write their answers;

- if they want to change their answer they should just cross out the first answer and put a tick in a different box; and
- they do not have to answer any questions that they do not want to.

ID numbers

In order to preserve the anonymity of the children, they are each given a unique ID number or identifier which is entered at the top of the questionnaire. These ID numbers are linked to the names of the children and held by the charity or school involved. The ID number is used to link the child's responses at the baseline and follow-up stages of the pilot, so we can see how his or her well-being has changed.

We can also use the ID numbers to link to additional data, for example which charity services the children used.

Timetable

Table 5 shows when we anticipate the final data will be collected for each charity well-being pilot. The only pilot to have been completed on writing this report is The Outward Bound Trust pilot.

To preserve the anonymity of the children, they are each given a unique ID number.

Table 5: Month of final data collection

Pilot	Final data
Barnardo's	August 2009
Beatbullying	July 2009
The Outward Bound Trust	February 2009
The Place2Be	July 2009
The Prince's Trust	July 2009

Methodology

Data from the pilots is being used to test the quality of the measurement scales in the questionnaire, to ensure that they pass all the crucial tests of reliability, validity and sensitivity.

- *Reliability* is the consistency of a measuring instrument.
- *Validity* is the extent to which a test measures what it claims to measure.
- *Sensitivity* is the ability of the test to detect change.

Further explanation of the statistical terminology and tests used in this report is given in a glossary in Appendix 1. The following methods are being used to assess the reliability, validity and sensitivity of the questionnaire:

Internal consistency: Cronbach's alpha tests the extent to which individual questions in a scale are measuring aspects of the same underlying explanatory factor. Having a high Cronbach's Alpha means that a child will tend to answer the different questions in the scale in a similar way. The well-being scales must each have a Cronbach's alpha of higher than 0.7, the generally acceptable standard.

Test-retest reliability: The test-retest method examines how stable the results of a test are over time. This is an important test because the factors underlying each measurement scale need to be relatively stable traits within an individual, unlike mood, for example. If the underlying trait or feeling that we are measuring is relatively stable, this means that any actual differences found within individuals over time are meaningful. Test-retest reliability is assessed using a correlation coefficient. Each scale must have a correlation coefficient of 0.7 or higher.

Sensitivity: The questionnaire's sensitivity to change over time is tested by comparing mean scores using a paired samples t-test. Differences in the mean well-being scores are detected at the 95% significance level.

Face validity: This is simply whether or not the test appears to be a good measure because the questions look appropriate, and the scale behaves in the way that one would expect.

Predictive validity: This is the extent to which a score on a scale predicts scores on some other criterion measure. For example, whether low levels of well-being in some areas predict a child voluntarily accessing The Place2Be services in school.

Concurrent validity: Concurrent validity is demonstrated where a test correlates well with a measure that has already been validated. Goodman's SDQ¹⁶ is a well-known behavioural screening questionnaire also used for evaluation, and is already used by The Place2Be.

Construct validity: Construct validity refers to whether a common factor can be shown to exist underlying the different questions within a scale. Here the theorised construct is that there are seven factors, or aspects of well-being, underlying the items in the questionnaire. NPC is piloting two versions of the questionnaire—one with questions grouped as scales, and another where the questions are randomly mixed. NPC will conduct a confirmatory factor analysis using AMOS software on data from the randomised questionnaire to assess whether the variability among the questions can be described using the seven aspects of well-being proposed.

All the above methods have been used in the interim analysis except the final two tests of concurrent and construct validity. These will be included in the final analysis of pilot data.

Other issues

As well as carrying out the tests of reliability, validity and sensitivity, we are piloting three different versions of the questionnaire to assess the effects of question order and the ratio of positive to negative items. The three versions are:

- *original*—questions in order;
- *mixed*—questions mixed; and
- *balanced*—questions mixed plus additional negative items.

Question order

There is usually a correlation of 0.2 or more between the answers to adjacent questions, even if they are unrelated. Mixing the question order can therefore reduce the internal consistency of a measurement scale. Question order is known to have a greater effect with younger children.

We wanted to test how much of an effect question order has on the way the children answered the questions. If the mixed scales are still sufficiently internally consistent, we can justify keeping the questions in order. This is preferable because keeping similar questions together is less confusing and easier for children to answer.

Data from the pilots is being used to test the quality of the measurement scales, to ensure they pass all the crucial tests of reliability, validity and sensitivity.

Positive and negative items

The original questionnaire contains more positive than negative items (in a 3:2 ratio). Having equal numbers of positive items (such as *'my friends are great'*) and negative items (such as *'I wish I had different friends'*) decreases the reliability of a scale but increases its credibility and validity. This is because children are encouraged to think harder about what is the right answer for them when the direction changes.

However, The Children's Society found that younger children find negative items harder to understand than positive items. Well-being is also recognised as a positive concept and measures should arguably reflect this. The third version of the questionnaire (the 'balanced' questionnaire) therefore contains additional negative items.

Charity feedback

As well as testing the questionnaire using the above methods, we have requested feedback from the pilot charities to assess the practicality of the questionnaire.

The charities are recording how long it takes for children to complete the questionnaire. They are also giving feedback on any problems they have had in implementing the questionnaire, for example, whether there were any statements that the children found hard to understand or if they had any trouble using the ID numbers or coordinating with schools.

Conclusion

NPC has designed pilots with five charities to ensure that the well-being questionnaire is as robust as possible, and practical for charities to use. We are using several statistical methods to assess the validity, reliability and sensitivity of the questionnaire.

The Outward Bound Trust pilot is the only pilot to have been completed on writing this report. The data from this pilot and The Place2Be baseline data have been used in the interim analysis. Further analysis will be conducted and reported in the final report on the development of the well-being questionnaire, later this year. The interim results are reported in the next chapter.



Photo credit: Magic Breakfast

The interim findings

This section outlines the results of the pilots so far, using data from The Place2Be and The Outward Bound Trust. In answer to the questions we raised in the previous chapter, the interim analysis has demonstrated that:

- the well-being scales are all sufficiently valid, except the peer relationships scale;
- the well-being scales are all sufficiently reliable, except the peer relationships scale;
- the well-being questionnaire is sensitive to change and showing some useful results; and
- the pilot charities have found the questionnaire practical to use on the ground.

So the questionnaire is generally robust and practical for charities to use. Some interesting findings have come out of the early data, demonstrating how the questionnaire could be used by charities, funders and schools.

Feedback from the charities

NPC has received feedback from the charities and schools staff on how practical the questionnaire is to implement. The feedback from The Place2Be, The Outward Bound Trust and the schools was positive. They all reported that questionnaire is easy to use in a classroom setting.

ID numbers

To identify the children, some groups used existing school or charity ID numbers, and others created and assigned new ID numbers. Charities needed to be careful to keep a record when new ID numbers were assigned so that no confusion occurred when children arrived or left during the school year. For this reason, and because using existing ID numbers made it easier to match

with additional information, it is preferable that charities use existing ID numbers to identify children during an evaluation.

Questionnaire length

The questionnaire tends to take from 10 to 20 minutes to complete, depending on the age and learning ability of the children. This is a sufficiently short length of time. Any longer and it may become too much of a burden on charities and the children they work with.

Questionnaire content

Other than one or two children with learning disabilities who needed help in completing the questionnaire, the children generally reported understanding all the items in the questionnaire.

One item in the resilience scale caused problems. The statement *'I take things in my stride'* was found to be problematic at the start of the pilots. It was replaced with the statement *'I usually manage one way or another'*, which children found easier to understand.

The interim sample

Table 9 in Appendix 3 shows all the data collected and entered* at the time of the interim analysis, including the pilot data that is not analysed and reported on in this chapter.

Data from The Outward Bound Trust and The Place2Be pilots was used for the interim analysis. Each of these charities piloted the questionnaire in two schools, so data from children in four schools has been used for the interim analysis. Table 6 shows the sample size for each school.

A total of 538 children completed the baseline questionnaire, and 192 children who did the Outward Bound course also completed the follow-up.

Data from The Outward Bound Trust and The Place2Be pilots was used in the interim analysis.

* Some data will have been collected but not yet entered, and is not included in Table 9.

Table 6: The interim analysis sample

Pilot	School	Base	Follow-up
The Place2Be	Merchiston	86	-
	Mark Hall	226	-
The Outward Bound Trust	McLaren	121	108
	Flixton	105	84
Total		538	192

The schools

Tables 10 to 13 in Appendix 3 show the age and sex of the children involved in the pilots at each of the four schools.

The Place2Be

Merchiston is an all-boys private school near Edinburgh. Forms 1, 2 and 3 were in the pilot. Most of the boys were aged 11 or 12, and a few (11) were 10 years old when they completed the baseline questionnaire.

Mark Hall is a mixed-sex state school in Harlow, Essex. Forms 7 and 8 were sampled. There were equal numbers of boys and girls and most were aged 11 or 12.

The Outward Bound Trust

McLaren is a mixed-sex state school in rural Perthshire, Scotland. There were equal numbers of boys and girls in the pilot, and most were aged 14 or 15. About 90% who did the baseline also completed the follow-up. There was no significant bias* in the follow-up sample.

Flixton is an all-girls state school in the suburbs of Manchester. Most of the girls in the pilot were aged 13 or 14. Eighty percent of those who did the baseline also completed the follow-up questionnaire. There was no significant bias in the follow-up sample.

Missing data

The well-being tool is a paper questionnaire answered by the children, who were told that they did not have to answer any question that they did not want to.

In some cases, the child skipped a question or did not complete the whole questionnaire. If there is missing data in one or more questions in a measurement scale, the child's answers to that scale have to be discarded, as it is the sum of the answers that determines the score. All the scales have five items except for the self-esteem scale, which has ten. Because it has more items, it is more likely to have some missing data. This reflected in the slightly lower sample sizes shown when analysing the self-esteem scale.

Appendix 1 is a glossary that explains the statistical terminology and tests used in this chapter. All differences are reported at the 95% significance level unless otherwise stated.

Internal consistency

The baseline questionnaires for both pilots in all four schools were used to assess the internal consistency of the scales.

Table 7 shows the Cronbach's alpha for the seven measurement scales. All the measurement scales have a Cronbach's alpha of higher than 0.7, the accepted minimum, except the peer relationships scale, which is exactly 0.7.

The lower bound of the 95% confidence interval for each of these Cronbach's alphas does not go below the 0.7 minimum, except for the peer relationships scale, where the lower bound is 0.66. This means that we cannot be 95% confident that the peer relationship scale is sufficiently internally consistent.

Table 7: Cronbach's alpha scores for the seven well-being scales

Well-being scale	N	Alpha
Self-esteem	502	0.88
Resilience	515	0.80
Emotional well-being	527	0.76
Peer relationships	529	0.70
Family relationships	521	0.84
School environment	522	0.81
Community environment	517	0.78

The importance of question order

Internal consistency can be reduced if questions are not in order. Table 14 in Appendix 3 shows the Cronbach's alphas for the mixed (The Outward Bound Trust pilots) versus the original (The Place2Be pilots) questionnaires.

One would expect the Cronbach's alpha for each scale in the mixed questionnaire to be consistently lower than that for the ordered questionnaire, because children generally find ordered questions easier to answer. However, this was not the case, because the comparison was confounded by age.

The mean age of the children in The Place2Be pilot baseline sample was 11.6 years, compared to 14.3 years in The Outward Bound Trust baseline sample. Older children were given the mixed questionnaire and question order is known to have a greater effect on younger children.³⁷

Despite this, in neither case is the Cronbach's alpha below 0.7, except in the case of the peer relationships scale for The Place2Be pilots, where the Cronbach's alpha is 0.67.

This implies that keeping the questionnaire in order should not undermine its validity, as long as the peer relationships scale is improved.

Test-retest reliability

To assess the test-retest reliability of the scales, the baseline and follow-up data from the two schools in The Outward Bound Trust pilots was used. This test is used to find out whether children tend to answer the questions in a similar way over time. If children do answer questions in a similar way over time, this means that the scale is measuring a relatively stable trait and that there is not too much error in the scale. As a result, any differences found during an evaluation are meaningful.

As Table 8 shows, all the scales are sufficiently reliable, except the peer relationships scale, which has a correlation coefficient of only 0.66, below the chosen minimum of 0.7.

Table 8: Test-retest reliability for the seven well-being scales

Well-being scale	N	Correlation Coefficient
Self-esteem	156	0.85
Resilience	170	0.73
Emotional well-being	172	0.80
Peer relationships	175	0.66
Family relationships	170	0.75
School environment	171	0.74
Community environment	170	0.74

Sensitivity

The sensitivity of the questionnaire to change was tested using the baseline and follow-up data from The Outward Bound Trust pilots in McLaren and Flixton schools.* A paired samples t-test was used to test whether there were any differences. Differences were tested at the 95% significance level unless otherwise stated.

Changes were observed between the baseline and follow-up in both McLaren and Flixton schools for some of the aspects of well-being, proving that the questionnaire is sensitive to change. The changes in well-being for the children in the two schools differed.

Not all the scales showed significant differences. There are three reasons why no difference might be observed between the baseline and follow-up scores.

1. The intervention has no effect on well-being.
2. There are other mitigating environmental factors, meaning that well-being has not changed overall.
3. The area of well-being, or the underlying emotion or trait, is insensitive to change.

Research into the well-being scales selected and adapted for the questionnaire has shown that they do measure change, so the final reason is unlikely to be the case.

The findings demonstrate how the questionnaire might be used to show differences in how children's well-being has changed over time.

McLaren

Tables 15, 16 and 17 in Appendix 3 show the results for McLaren school. The key findings were that:

- girls showed significant improvements in self-esteem, resilience and emotional well-being;
- boys showed improvements in emotional well-being only; and
- girls at McLaren school started with lower levels of well-being in most areas, including self-esteem, resilience and emotional well-being.

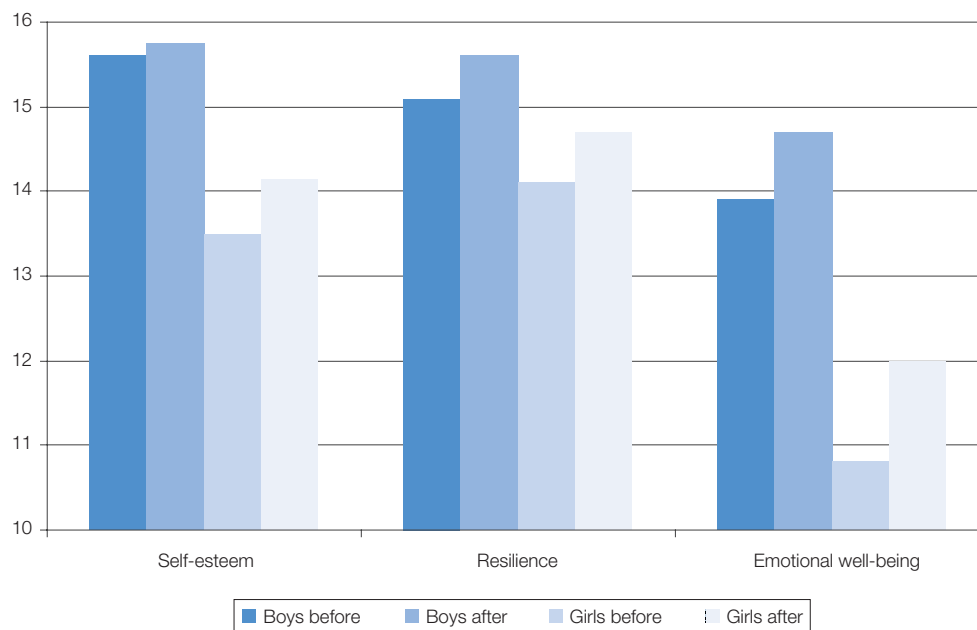
Figure 2 shows the scores[†] for boys and girls at the baseline and follow-up stages for the three areas of well-being significantly affected by the Outward Bound course—self-esteem, resilience and emotional well-being.

The girls at McLaren school showed significant improvements in self-esteem, resilience and emotional well-being.

* The same data was used to assess both the test-retest reliability and the sensitivity of the seven well-being scales to change. This is not problematic. It is possible to have a high correlation coefficient and a consistent difference between two scores. Any consistent difference between the two scores will reduce the correlation coefficient only slightly, because the difference is in the same direction. This means that the correlation coefficients used to assess test-retest reliability are conservative estimates. If there is no consistent difference between the baseline and follow-up, the correlation coefficient will not be affected.

[†] These scores are raw scores, not standardised scores. This means that comparisons can be made within a measurement scale but not between measurement scales. For example, we cannot say that on average children at McLaren have higher self-esteem than emotional well-being. We can however say that boys have greater self-esteem than girls at McLaren, and that girls have improved self-esteem over time.

Figure 2: Baseline and follow-up scores for McLaren’s boys and girls’ self-esteem, resilience and emotional well-being



Box 6: How can charities and funders use the questionnaire?

The well-being questionnaire can be used by both charities and funders to prove their success. Charities can also use it to attract funding and adapt and improve their services. The main purpose of the pilots is to assess the quality of the well-being questionnaire. However, because the questionnaire is largely reliable, valid and working well, the results will also be very useful to the charities and schools involved.

There are a number of ways that The Outward Bound Trust could use its results. Using the findings from the well-being questionnaire, the charity could:

1. **prove** to funders that its courses can improve self-esteem, resilience and emotional well-being;
2. **explore** the reasons for the girls at McLaren benefiting more than the boys from the course, and taking lessons from this;
3. **compare** the well-being of the children it works with to the national average, to see if it is working with disadvantaged children and understand how much they have improved by;
4. **advise** schools that if they want pupils to reap some of the benefits of its courses, such as improved self-esteem, pupils should do an Outward Bound course at the start of term; and
5. **design** future evaluations so that follow-up measures of subjective well-being are not taken too long after the course, in order to ensure that any improvements in well-being are not mitigated by environmental factors.

We would eventually like to link the subjective well-being outcomes to objective outcomes (see Chapter 6) using a longitudinal survey and in partnership with The Children’s Society. For example, we could link improved self-esteem to improved academic attainment. If we did this, charities like The Outward Bound Trust would also be able to prove that their programmes are likely not only to improve self-esteem, but also to improve the academic attainment of pupils for a period of time after they do the course.

Flixton

Table 18 in Appendix 3 shows the results for each area of well-being for the girls at Flixton school. The baseline questionnaire was completed a week before the intervention, and the follow-up questionnaire was completed five weeks after. The key findings were that:

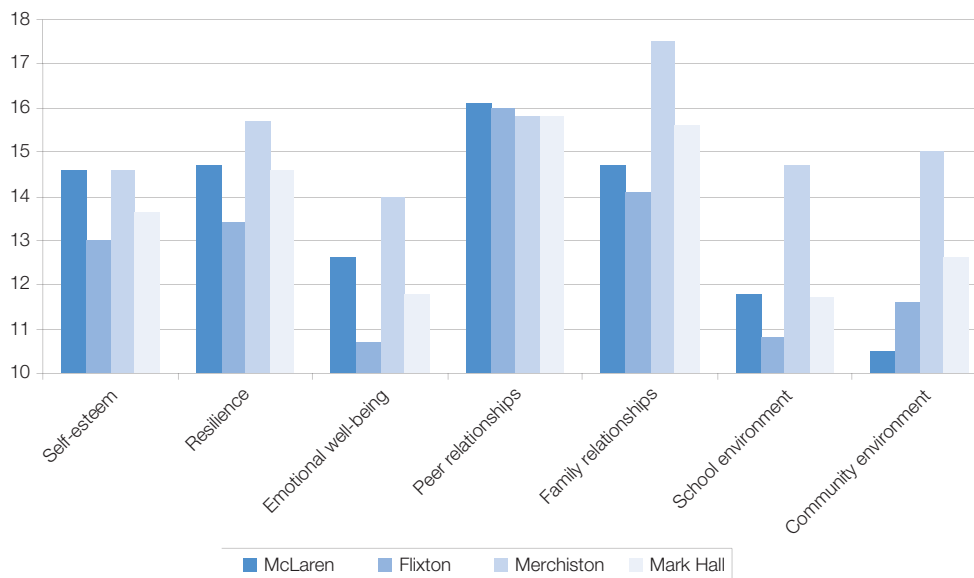
- there were no improvements in well-being;
- there was a reduction in satisfaction with peer relationships; and
- there was a reduction in satisfaction with family relationships, but only at the 90% significance level.

Explanation

The different results for the two schools can largely be explained by the timing of the follow-up measure.

The baseline was taken about a week before The Outward Bound course in both schools. At McLaren, the follow-up was taken a week after the course, whereas in Flixton it was taken five weeks later, after the Christmas holidays.

It is likely that no improvements in well-being were seen at Flixton, not because the Outward Bound course had no effect, but because the effect of the intervention was mitigated by the intervening environmental factors—in particular, the Christmas holiday period.

Figure 3: The baseline well-being scores for the four schools

This finding has implications both for the design of evaluations and for schools wanting to send children on an Outward Bound course.

Box 6 outlines some of the ways that The Outward Bound Trust might use the results of these pilots to prove its success and adapt services.

Validity

Data from both The Outward Bound Trust and The Place2Be pilots was used to test the validity of the well-being questionnaire. Face validity was assessed by looking at differences between the baselines of all four pilot schools. Predictive validity was tested using data on who accessed The Place2Be services in Mark Hall and Merchiston schools.

Face validity

We wanted to see if there were any differences in the baseline levels of well-being of the children in the four schools (Tables 19 and 20). Children who live in more deprived communities would be expected to have lower levels of subjective well-being.¹²

The Outward Bound Trust

Flixton is based in a suburb of Manchester with higher levels of poverty and crime than McLaren school, which is located in rural Scotland. The children at Flixton school scored significantly lower than the children at McLaren school in all areas of well-being, except the two relationships domains and the community environment domain.

This is expected given the higher levels of deprivation at Flixton, and supports the questionnaire's face validity.

The Place2Be

Merchiston is a private school for children from relatively privileged backgrounds, whereas Mark Hall is a state school where the children are more disadvantaged. The children at Mark Hall scored significantly lower than the children at Merchiston school in all areas of well-being, except the peer relationships domain. This is expected and supports the questionnaire's face validity.

Figure 3 shows the baseline well-being scores for all the four schools. The Flixton girls scored the lowest in almost all areas of well-being. The difference between the well-being of boys and girls is explored further below.

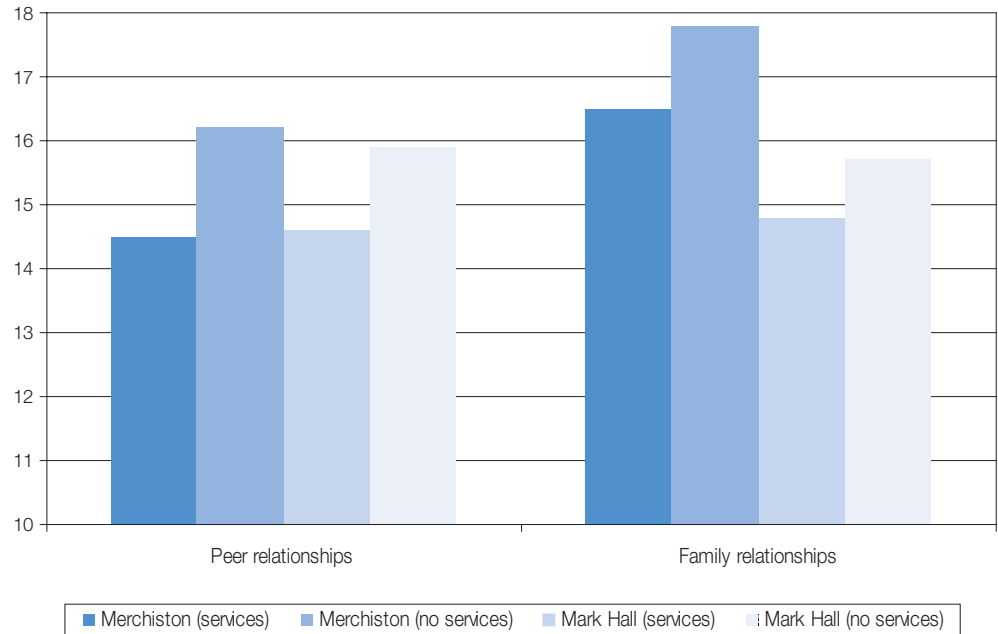
While it is hard to prove the reasons for the differences between the schools, the differences do make sense given what we know about the schools. The results therefore support the hypothesis that the scales are measuring what they are supposed to.

Interestingly, the least difference between the schools is in the peer relationships area of well-being. It may be that quality of friendships is an area of well-being that is less impacted by economic or environmental factors, than self-esteem or family relationships, for example.

Box 7 discusses how schools might be able to use the well-being questionnaire.

The children who used The Place2Be services had significantly worse peer and family relationships than those who did not.

Figure 4: Peer and family relationship scores for children who did and did not use The Place2Be services at Merchiston and Mark Hall



Predictive validity

Predictive validity was tested by adding data on whether children had used The Place2Be services in the first term of the school year, to their questionnaire answers.

Tables 21 and 22 in Appendix 3 compare the baseline levels of well-being of those who did with those who did not use The Place2Be services in the first term of the year for the two schools.

Mark Hall

The children who used The Place2Be services had significantly worse peer relationships than those who did not, at the 90% significance level.

Merchiston

The children who used The Place2Be services had significantly worse peer and family relationships than those who did not, at the 95% significance level.

Figure 4 shows the scores for peer and family relationships for children at Mark Hall and Merchiston who did use The Place2Be services in the autumn term, compared with those who did not.

The Place2Be aims to help children with emotional or behavioural problems. It often targets children who have been victims of bullying or who have problems at home, such as separation, divorce or a poor relationship with their parents.

The results confirm the questionnaire's predictive validity using only one term's worth of data on who chose to use the services. Once we have a full year's worth of data on children using The Place2Be services, we may be able to show that other areas of well-being also predict service usage.

Girls and boys

McLaren girls tend to have lower well-being than McLaren boys. The children at Flixton girls' school tend to have lower levels of well-being than the other schools.

It may be that girls of certain ages tend to score lower than boys in some domains of well-being. If this is the case, the questionnaire may need to be standardised separately for boys and girls.

Box 7: How can schools use the questionnaire?

Schools could use the well-being questionnaire in a number of ways to prove their success to parents and inspectors, and to improve the standard of teaching and care in the school. For example, they could use the questionnaire to:

- **prove** that they are improving or maintaining well-being over the school year;
- **explore** whether there are certain groups of pupils who are struggling more than others—for example, by age, sex or ethnic minority—so that the school can then try to help those with the lowest well-being; and
- **compare** the well-being of their pupils to the national average and see which areas of well-being they most need to work on.

NPC intends eventually to publish advice on how schools might use the questionnaire. For example, we intend to link the areas of well-being measured by the questionnaire to relevant subjective outcomes, such as those in the Scottish Curriculum for Excellence.⁴⁴

This hypothesis was tested by comparing baseline well-being for the girls and boys at Mark Hall school. Table 23 in Appendix 3 shows the results. There were no significant differences in the well-being of boys and girls at Mark Hall school in most areas of well-being, except that:

- girls score higher than boys in peer relationships and satisfaction with school environment; and
- girls score lower than boys in emotional well-being.

We have therefore not seen any consistent trends differentiating the well-being of girls and boys across schools. This implies that the questionnaire should not be standardised separately for girls and boys.

Conclusion

The interim analysis shows that all the well-being scales in the questionnaire are reliable and valid, except the peer relationships scales, which will need to be reviewed.

In addition, the questionnaire is sensitive to change and is showing interesting and useful differences when comparing groups of children within schools, between schools and before and after charity interventions. The well-being questionnaire is showing its potential as a highly useful tool for charities, funders and schools.

The final chapter outlines the next steps that we need to take in developing the questionnaire and our plans for the launch.

The well-being questionnaire is showing its potential as a highly useful tool for charities, funders and schools.



Photo credit: The Outward Bound Trust



Photo credit: SHINE Trust

Launching the questionnaire

The subjective well-being questionnaire is due to be launched in October 2009, when it will be freely available online for charities to download and use. NPC will also provide support and guidance in implementing the questionnaire and analysing the data as part of a 'well-being toolkit'.

The well-being questionnaire will help charities to capture their full impact in a way never possible before. We want it to become the best and most recognised method for capturing subjective outcomes in the voluntary sector.

This section outlines the next steps NPC will take in developing the questionnaire before it is ready to be launched. It also describes our plans for the future, including launching the questionnaire online and disseminating it widely to all stakeholders.

Further development and analysis

The interim findings from the well-being pilots, presented in this report, indicate that the questionnaire is reliable, valid and useful. However, further development of the peer relationships scale needs to be conducted, and a new emotional well-being scale needs to be selected and piloted, before the questionnaire is launched. It also needs to be standardised and to pass further tests of robustness.

We are dedicated to testing the questionnaire as rigorously as possible to ensure that it is of the highest academic standard and useful to charities. The following development and analysis needs to be conducted before the launch:

Further analysis of pilot data: The data from all five pilots will be analysed to ensure the scales continue to pass all tests of validity, reliability and sensitivity. We will also explore the data to demonstrate how the questionnaire could be used by charities, funders and schools to prove their success and adapt their services.

Factor analysis to test construct validity: NPC will use AMOS software to conduct a confirmatory factor analysis on the mixed questionnaire.

Analysis to test concurrent validity. The concurrent validity of the scales will be assessed using Goodman's SDQ¹⁶ data collected by The Place2Be and well-being rankings given by the Beatbullying practitioners.

Development and testing of new peer relationships scale: NPC will work with The Children's Society to select alternative items from within the friends section of the Huebner MLSS³³ that increase the overall internal consistency and test-retest reliability of the scale. The new scale will be tested during the remaining pilots.

Selection and testing of new emotional well-being scale: Consent was not given to use Goodman's emotional symptoms sub-scale of the SDQ in the final questionnaire. NPC will pilot two alternative scales to measure emotional well-being, one developed by Achenbach³⁹ and one that is part of the Kidscreen-52 questionnaire.⁴¹ These are being tested alongside Goodman's SDQ sub-scale in the Beatbullying pilots.

Standardisation of the questionnaire using national data: National data collected by The Children's Society will be used to standardise the seven measurement scales, so that charities can put their results into a national context and prove whether they are working with children with particularly low levels of well-being.

Engaging with key stakeholders

NPC is setting up a steering group of experts and key stakeholders including academics, charity spokespersons, funders, and local and central government representatives.

Members of this steering group have informed the development of the scale, ensuring that it is of the highest possible quality and policy-relevant. They will also serve, crucially, to raise the profile of the well-being scale and promote its use throughout the sector.

NPC wants the charity well-being questionnaire to become the best and most recognised method for capturing subjective outcomes in the voluntary sector.

As more charities use the well-being questionnaire, the evidence of what works best will grow, and success will be rewarded.

Table 24 in Appendix 4 shows the steering committee members. We have engaged with academics who not only have the most relevant expertise, but who also have an interest in the project and who practically have time to participate. We are also recruiting local and central government representatives to ensure that the well-being questionnaire is relevant to policy and the commissioning process.

Building a community of charities measuring subjective well-being

NPC intends to launch the well-being questionnaire in October 2009. There will be a launch event and NPC will promote the questionnaire at voluntary sector events and conferences.

We will also develop and market an online well-being toolkit. As well as the questionnaire, the toolkit will contain detailed guidance on how to design an evaluation and use the questionnaire effectively.

There are already a number of charities using the questionnaire, and more who are interested in using it from when it is launched at the start of the next school year. We want the well-being questionnaire to eventually become the most widely used method for capturing subjective well-being in the voluntary sector.

The well-being toolkit

The well-being toolkit will be launched online* and will contain information for potential users of the well-being questionnaire. When the toolkit is first launched a basic package will be provided that includes the following:

The questionnaire: Charities will be able to download the paper version of the questionnaire, or may be able to use an online version.

Guidelines on using the questionnaire: The toolkit will include detailed information and advice on how to start thinking about and designing an appropriate evaluation, how the well-being questionnaire might sit within the evaluation, and how to administer the questionnaire on the ground.

A user forum: Members will be able to sign up to emails containing advice and news, and the website will act as an interactive forum for sharing experiences and ideas.

NPC is also exploring the possibility of providing standard software templates for analysing data collected using the well-being questionnaire.

We may also be able to provide some analysis services for early users, and will eventually provide training courses.

The well-being toolkit will become more sophisticated as we develop it further. We intend eventually to have analysis software attached to the back-end of the website, meaning that after children have completed the questionnaire online, charities can immediately access the results of the evaluation. This will also mean that charities do not have to have any experience of data analysis to use the questionnaire.

We also intend eventually to include a list of objective outcomes relevant to charities working with 11 to 16 year olds, which charities might want to consider collecting alongside the well-being questionnaire.

Costs

We anticipate that the well-being questionnaire will be freely available online for registered charities to use. There may be some charges for organisations wishing to use the well-being toolkit to cover some of the cost to NPC of developing the questionnaire.

Data sharing

A condition of using the questionnaire will be that charities are obliged to submit their anonymised data via the website as evidence of impact. NPC will use this data, together with case studies submitted by these charities, to inform any future revisions to the well-being scale or website.

We also intend to use the data submitted by charities to contribute to the literature on what works in improving outcomes for children. As more charities use the well-being questionnaire, the evidence of what works best will grow, and success will be rewarded.

Beyond the launch

Once the first subjective well-being questionnaire has been launched, NPC intends to continue refining this and similar tools as part of our broader mission to help charities and funders become more effective.

We will create versions for other demographic groups, research links between subjective and objective outcomes, and explore the possibility of placing a financial value on improvements in subjective well-being. We will also continue promoting the use of the subjective well-being tool throughout the third sector.

* The toolkit may be launched on NPC's website or on a new website dedicated to well-being.

Questionnaires for other groups

NPC intends to design well-being questionnaires for other groups of people. These may include:

- young people aged 16 to 25;
- older people; and
- younger children below the age of 11.

If you are interested in supporting the development of any of these, or a subjective well-being questionnaire for another group, please do contact NPC.

Placing a financial value on well-being

Once the well-being scale has been finalised, NPC will look at placing a financial value on movements within the scale. Methods such as Social Return on Investment (SROI) attempt to capture the value of social benefits by comparing the amount of money invested with all the financial benefits of the project. SROI, however, currently lacks the tools to account for non-financial benefits, such as increased self-esteem or better family relationships. Creating a single recognisable scale of well-being could lead to a framework that integrates costs and benefits in terms of well-being with financial costs and benefits.

Matching subjective and objective well-being outcomes

We eventually hope to be able to link subjective well-being with objective outcomes such as improved academic attainment and reduced truancy. We are working in partnership with The Children's Society to draw up a list of objective outcomes, which will be captured in the charity's nationally-representative survey of well-being. The Children's Society is also exploring the possibility of including a longitudinal element in its national survey which will allow short-term improvements in a child's subjective well-being to be linked to objective outcomes later in their life.

Want to know more?

If you are interested in knowing more about the subjective well-being questionnaire, want to use the questionnaire for your own evaluation, or would like to help NPC with its well-being research, please email Camilla Nevill at cnevill@philanthropycapital.org.

NPC wants to help create a world in which both charities and their funders are as effective as possible in changing people's lives and tackling social problems. We welcome your comments and suggestions on any aspect of the report.

Conclusion

NPC believes it is vital for charities to measure their impact. If they do not, the most effective cannot be scaled-up, the least effective cannot be challenged, and the maximum benefit for the children they work with cannot be achieved.

Yet children's charities struggle to measure their impact because they cannot put a number on happiness.

NPC has developed a questionnaire that will finally allow children's charities to put a number on those intangible aspects of life like self-esteem, resilience and good relationships that are so crucial to a child's happiness.

We plan to launch the questionnaire in October 2009 from when it will be freely available online for charities to use. The questionnaire will help charities to demonstrate their impact, improve their services, and ultimately ensure the maximum benefit for the children with whom they work.

Appendices

Appendix 1: Glossary of statistical terminology and tests

Concurrent validity

Concurrent validity is demonstrated where a measurement scale correlates well with an existing measure that has already been validated. The two measures may be for the same construct, or for a different but presumably related construct.

For example, the concurrent validity of a self-esteem scale can be tested by asking people to answer it alongside another self-confidence scale, and seeing whether respondents' answers on the two scales are correlated.

Confidence interval

A confidence interval around an estimate is the interval within which one can be relatively sure the actual value in the population lies. In this report, statistically significant results are usually reported at the 95% significance level. The confidence interval for any estimate is therefore the interval within which we can be 95% sure that the true value lies. See also *Statistical significance*.

Confirmatory factor analysis

Factor analysis is a statistical method used to describe variability among observed variables in terms of fewer unobserved variables called factors. Confirmatory factor analysis is used to assess the number of factors in a survey or questionnaire, and to test whether a proposed construct (in this case seven factors) fits with the way respondents answer the questions, and resulting data.

Structural equation modelling software, such as the AMOS programme, is used to conduct this type of analysis.

Construct validity

Construct validity refers to whether a scale measures a theorised psychological construct, or that a common factor, or series of common factors, can be shown to exist underlying the different questions within the scales.

In the case of the well-being scale, we are theorising that there are seven different underlying factors that exist to explain the variation in responses to the questions. Construct validity can be tested by conducting a confirmatory factor analysis on a version of the questionnaire where all the questions are randomly mixed, rather than in order.

Correlation

In statistics, correlation (often measured as a correlation coefficient, r) indicates the strength and direction of a linear relationship between two variables. This is in contrast with the way the term is used in speech, which denotes any relationship, not necessarily linear.

Correlation is usually measured using the Pearson correlation coefficient, r , which gives a value between +1 (full positive correlation) and -1 (full negative correlation) depending upon the strength and direction of the correlation.

The correlation coefficient is calculated using the formula

$$r = \frac{1}{n-1} \sum_{i=1}^n \left(\frac{X_i - \bar{X}}{s_X} \right) \left(\frac{Y_i - \bar{Y}}{s_Y} \right)$$

where

$$\frac{X_i - \bar{X}}{s_X}, \bar{X}, \text{ and } s_X$$

are the standard score, sample mean and the sample standard deviation (calculated using $n-1$ in the denominator).

Cronbach's alpha

Cronbach's alpha is a measure of the internal consistency of a questionnaire. It increases as the correlations between individual questions increase and so can be thought of as measuring how much the different questions are measuring aspects of the same thing.

Cronbach's alpha is defined as

$$\frac{N}{N-1} \left(\frac{\sum X^2 - \sum_{i=1}^N \sum Y_i^2}{\sum X^2} \right)$$

where N is the number of questions, σ_x^2 is the variance of the observed total score, and $\sigma_{Y_i}^2$ is the variance of question i . A value of over 0.7 is the generally accepted standard.

Face validity

This is an estimate of whether a test appears to measure a certain underlying factor based on what the questions or statements look like and how the scale behaves. For example, if the questions look like they are measuring self-esteem or peer relationships, then they have good face validity. Also, if a child's score improves on a scale measuring self-esteem after he or she has been on a personal development course, this is good face validity, as the scale has behaved in the way it is expected to.

Independent samples t-test

This test is used to compare the difference between the mean scores for two different or independent groups of people on a single test. If the two groups are not the same size but have the same underlying variance, the t statistic can be tested using the formula

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{X}_1 - \bar{X}_2}}$$

where

$$S_{\bar{X}_1 - \bar{X}_2} = \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$$

where s^2 is the unbiased estimator of the variance of the two samples, n = number of participants, 1 = group one, 2 = group two.

Internal consistency

Internal consistency is a measure based on the correlations between the different items on the same test. It measures whether several items that are supposed to measure the same general construct produce similar scores. It is usually measured using Cronbach's alpha (see above).

Paired samples t-test

This test is to compare the difference between the means for a group of people at two different points in time. The answers that a person has given at two points in time need to be matched or 'paired'. The t statistic is calculated using the following formula:

$$t = \frac{\bar{X}_D - \mu_0}{S_D / \sqrt{N}}$$

For this equation, the differences between all the pairs for each respondent must be calculated. The average (\bar{x}) and standard deviation (sd) of those differences are used in the equation. The constant μ_0 is non-zero if one wants to test whether the average of the difference is significantly different than μ_0 . The degree of freedom used is $n-1$.

Predictive validity

Predictive validity is the extent to which a score on a scale or test predicts a respondent's score or behaviour on some criterion measure.

For example, the validity of a cognitive test for job performance is the correlation between test scores and, for example, supervisor performance ratings. Such a cognitive test would have predictive validity if the observed correlation were statistically significant.

Reliability

Reliability is the consistency for a set of measuring instruments or scale. Reliability is inversely related to measurement error, so the less reliable a scale is, the more random error there is in the scale. If a scale is reliable then an individual should answer all the items in the same way (internal consistency) and in the same way at different points in time (test-retest reliability).

Statistical significance

Statistical significance shows how likely a result is due to chance. The most common level, used to mean something is good enough to be believed, is 0.05. This means that the finding has a 95% chance of being true.

All results here are reported to the 95% significance level (in the tables a 95% significance is shown when a p value is lower than 0.05, meaning that there is a less than 5% likelihood of the difference being due to chance), except in some cases where 90% significant differences are reported (a p value of lower than 0.01 in the results tables, meaning there is a less than 10% likelihood that the difference is due to chance).

Test-retest method

Test-retest is a statistical method used to examine how stable or reliable the results of a test are. It is used to ensure that you are testing a relatively stable trait or state within an individual, rather than something that fluctuates often, like mood. This is so that any differences seen within a person between two points in time are meaningful.

A test is performed twice (eg, the same test is given to a group of subjects at two different times). If the test is reliable and the subjects have not changed in the interval then each subject should score the same in both tests. The score is the correlation coefficient between the two rounds. Ideally the correlation should be 1, but in reality scores will change slightly and so anything above 0.7 is generally considered acceptable.

Validity

Validity is the extent to which a test measures what it claims to measure. It is vital for a test to be valid in order for the results to be accurately applied and interpreted. Validity is not determined by a single test or statistic but rather by a body of research that demonstrates the relationship between the test and the behaviour it is intended to measure. There are various methods for assessing validity, or types of validity, including concurrent validity, predictive validity and construct validity.

Appendix 2: The charity pilots

Barnardo's Young Carers

Barnardo's is a large UK charity that works with vulnerable children through a variety of projects.

The Young Carers programme aims to support young carers and their families. Young carers are children who have to help look after a family member who is sick, disabled or has mental health problems, or is misusing drugs or alcohol.

The project working with young carers provides a variety of services for as long as the child needs them. The services include advice and emotional support through counselling and drop-in services, providing recreational and social opportunities, liaising with schools, teachers and parents, and a variety of workshops from health and harm to assertiveness and decision-making.

The subjective well-being questionnaire is being piloted with new referrals to the Young Carers programme in four areas in Wales:

- Carmarthenshire
- Caerphilly
- Merthyr
- Flintshire

The baseline is being taken when the young carer is first referred onto the programme, and the follow-up after the young carer has been in the programme for six months.

Beatbullying

Beatbullying is a charity that was established in 2001, and works with children and young people in schools and youth groups to develop anti-bullying strategies.

CyberMentors is an online anti-bullying mentoring service that Beatbullying is working with government to provide. Beatbullying trains up groups of young people in schools who were previously victims or perpetrators of bullying. They become online 'CyberMentors' and mentors in their own school.

The Beatbullying pilot involves following up four groups of approximately 25 CyberMentors being trained in four schools:

- Fort Pitt Grammar School for Girls
- Highsted Grammar School
- All Saints Catholic High School
- Abbey School Kent

The baseline is taken between a week and a month before the intervention occurs. The length of time after the training that the follow-up measure is taken varies.

The Outward Bound Trust

The Outward Bound Trust is an educational charity that uses outdoor experiences and challenges to help develop young people. Courses last between three days and three weeks. They aim to improve self-esteem, self-awareness, motivation, inter-personal skills and leadership skills, through a variety of adventurous activities.

The Outward Bound Trust pilots were conducted with two schools which were doing the Outward Bound five-day course:

- McLaren, a mixed state school in rural Perthshire; and
- Flixton, an all girls state school in Manchester.

The baseline was taken in the week preceding the week-long intervention. The follow-up was taken a week after the end of the intervention in the case of McLaren, and over a month after the end of the intervention in the case of Flixton.*

* This was because the Outward Bound course was at the end of the autumn term, so the follow-up could not be taken until the beginning of the spring term, when the children returned to school

The Place2Be

The Place2Be provides emotional and therapeutic support for children in schools. The Place2Talk lunch-time self-referral service for children, where they can talk about whatever is worrying them. Common topics include relationships, bereavement and bullying. Some children are then referred onto specialist services. These include individual and group counselling services for children with more acute problems.

The Place2Be pilots are being conducted in two schools:

- Merchiston: a private boys school based in Edinburgh; and
- Mark Hall: a mixed state school in Harlow, Essex.

The baseline measure was taken at the beginning of the school year and the follow-up is being taken at the end of the school year.

The whole of the first two school years (aged 10 to 13) are included in the pilots. After the pilot is finished, data on who accessed The Place2Be services will be matched to answer the following questions:

- Did the children who accessed The Place2Be services have lower levels of well-being in some areas?
- Were there any improvements in well-being for those children who used The Place2Be services, and how did this compare to those children who did not?

The Prince's Trust xl clubs

The Prince's Trust is a large UK charity that helps children and young people who are being excluded or are not in education, employment or training. The charity does this through programmes that provide support and develop key skills, confidence and motivation.

The Prince's Trust xl clubs are a team-based programme of personal development for students who are in their last two years of compulsory schooling. It aims to help children who are having trouble at school and are at risk of exclusion. The clubs meet with an xl adviser for at least three hours a week and are encouraged to work together to achieve goals relating to their education, training and future lives. At the end of the year, participants receive an ASDAN award in the 'Wider Key Skills' of Problem Solving, Working with Others and Improving own Learning.

The pilots are being conducted in a number of school xl clubs, including:

- Castlemilk High School, Glasgow
- Smart Project Club, Llanelli

The aim was to take the baseline at the beginning of the school year, and the follow-up at the end of the school year.[†]

[†] Due to some issues, this pilot is not being conducted as planned. In particular, the instructions for using ID numbers were not always followed, so it will be impossible to conduct a follow-up in some of the school clubs. The lessons to be learnt from this will be covered in the final report.

Appendix 3: Findings

Findings that are in bold and italicised indicate that the difference is significant at the 95% confidence level ($p < 0.05$).

Any findings that are italicised and not in bold are significant at the 90% significance level ($p < 0.1$).

Not all percentage columns sum to exactly 100%. This is because all percentages are rounded to the nearest percentage point.

Table 9: Pilot data collected

Charity	Pilot intervention	School / area	Sex	Age	Questionnaire type	Base N	Follow-up N
The Place2Be	Counselling	Merchiston	Male	10 to 13	Original	86	-
		Mark Hall	Mixed	11 to 13	Original	226	-
The Outward Bound Trust	The Outward Bound course	McLaren	Mixed	14 to 16	Mixed	121	108
		Flixton	Female	13 to 15	Balanced	105	84
Barnardo's	Young Carers	Carmarthenshire	Mixed	11 to 13	Original	3	-
		Caerphilly	Mixed	11 to 16	Original	20	-
		Flintshire	Mixed	10 to 17	Original	13	-
		Merthyr	Mixed	13	Original	1	-
The Prince's Trust	xl programme	-	Mixed	14 to 15	Original	41	-
Beatbullying	CyberMentors	-	Mixed	-	Original	(100)*	-

Table 10: Age of The Place2Be sample at Merchiston boys school

Age	N	%
10	11	13%
11	28	33%
12	42	49%
13	5	6%
Total	86	100%

Table 11: Age and sex of The Place2Be sample at Mark Hall school

Age / sex	N	%
11	111	49%
12	92	41%
13	23	10%
Male	115	51%
Female	108	48%
(missing)	3	1%
Total	226	100%

Table 12: Age of The Outward Bound Trust sample at Flixton girls school

Age	Baseline		Follow-up	
	N	% of total	N	% of base
13	40	38%	33	83%
14	49	47%	42	86%
15	12	11%	8	67%
(missing)	4	4%	1	25%
Total	105	100%	84	80%

* At the time of writing the Beatbullying pilot is underway. It is due to be run in four school with 25 children at each.

Table 13: Age and sex of The Outward Bound Trust sample at McLaren school

Age / sex	Baseline		Follow-up	
	N	% of total	N	% of base
14	25	21%	24	96%
15	95	79%	84	88%
16	1	1%	0	0%
Male	65	54%	58	89%
Female	56	46%	50	89%
Total	121	100%	108	89%

Table 14: Cronbach's alpha scores for the seven measurement scales

Measurement scale	Place2Be (original)		Outward Bound (mixed)		All	
	N	%	N	%	N	%
Self-esteem	292	0.86	210	0.90	502	0.88
Resilience	300	0.78	215	0.82	515	0.80
Emotional well-being	309	0.77	218	0.74	527	0.76
Peer relationships	308	0.67	221	0.75	529	0.70
Family relationships	303	0.81	218	0.86	521	0.84
School environment	305	0.81	217	0.80	522	0.81
Community environment	300	0.78	217	0.75	517	0.78

Table 15: Differences between the baseline and follow-up for McLaren school

Measurement scale	N	Mean score		p
		Base	Follow-up	
<i>Self-esteem</i>	91	29.1	29.9	0.021
<i>Resilience</i>	101	14.6	15.2	0.006
<i>Emotional well-being</i>	100	12.5	13.5	0.000
Peer relationships	103	16.0	15.8	0.214
Family relationships	100	14.6	14.7	0.608
School environment	102	11.8	12.2	0.120
Community environment	101	10.7	10.9	0.511

Table 16: Differences between the baseline and follow-up for McLaren school by sex

Measurement scale	Male				Female			
	N	Base	Follow	p	N	Base	Follow	p
Self-esteem	46	31.2	31.5	0.521	45	27.0	28.3	0.013
Resilience	55	15.1	15.6	0.080	46	14.1	14.7	0.026
<i>Emotional well-being</i>	54	13.9	14.7	0.027	46	10.8	12.0	0.003
Peer relationships	55	15.5	15.1	0.196	48	16.6	16.5	0.658
Family relationships	53	14.8	14.7	0.919	47	14.4	14.7	0.359
School environment	54	11.8	12.1	0.342	48	11.9	12.4	0.204
Community environment	53	11.5	11.5	0.798	48	9.8	10.3	0.198

Table 17: Baseline well-being at McLaren school by sex

Measurement scale	Male		Female		p
	N	Mean	N	Mean	
<i>Self-esteem</i>	57	31.1	53	27.2	0.000
<i>Resilience</i>	62	15.1	53	14.2	0.040
<i>Emotional well-being</i>	63	14.0	53	10.9	0.000
Peer relationships	63	15.7	55	16.5	0.129
Family relationships	62	15.0	55	14.4	0.374
School environment	62	11.5	54	12.1	0.436
<i>Community environment</i>	62	11.3	54	9.7	0.033

NB, the reason that the sample sizes and mean scores are different in Table 17 from Table 16 is that the baseline only includes those who also answered the questionnaire at the follow-up stage in Table 16.

Table 18: Differences between the baseline and follow-up for Flixton school

Measurement scale	N	Mean score		p
		Base	Follow-up	
Self-esteem	65	26.1	25.4	0.129
Resilience	69	13.5	13.5	0.966
Emotional well-being	72	10.6	10.7	0.817
<i>Peer relationships</i>	72	16.1	15.3	0.010
<i>Family relationships</i>	70	14.2	13.5	0.063
<i>School environment</i>	69	11.2	10.6	0.071
Community environment	69	11.7	11.1	0.133

Table 19: Comparison of baseline measure for Flixton and McLaren schools

Measurement scale	McLaren		Flixton		p
	N	Mean	N	Mean	
<i>Self-esteem</i>	110	29.2	100	26.0	0.000
<i>Resilience</i>	115	14.7	100	13.4	0.005
<i>Emotional well-being</i>	116	12.6	102	10.7	0.000
Peer relationships	118	16.1	103	16.0	0.724
Family relationships	117	14.7	101	14.1	0.251
<i>School environment</i>	116	11.8	101	10.8	0.045
<i>Community environment</i>	116	10.5	101	11.6	0.037

Table 20: Comparison of baseline measure for Merchiston and Mark Hall schools

Measurement scale	Merchiston		Mark Hall		p
	N	Mean	N	Mean	
<i>Self-esteem</i>	81	29.2	211	27.3	0.008
<i>Resilience</i>	84	15.7	216	14.6	0.007
<i>Emotional well-being</i>	86	14.0	223	11.8	0.000
Peer relationships	84	15.8	224	15.8	0.991
<i>Family relationships</i>	82	17.5	221	15.6	0.000
<i>School environment</i>	85	14.7	220	11.7	0.000
<i>Community environment</i>	83	15.0	217	12.6	0.000

Table 21: Comparison of baseline well-being between those who did and did not use The Place2Be services in the first term in Merchiston

Measurement scale	Used services		Did not use services		p
	N	Mean	N	Mean	
Self-esteem	19	28.1	62	29.6	0.303
Resilience	21	14.9	63	15.9	0.199
<i>Emotional well-being</i>	21	12.6	65	14.4	0.078
<i>Peer relationships</i>	21	14.5	63	16.2	0.028
<i>Family relationships</i>	20	16.5	62	17.8	0.048
<i>School environment</i>	21	13.7	64	15.1	0.099
Community environment	19	15.9	64	14.8	0.214

Table 22: Comparison of baseline well-being between those who did and did not use The Place2Be services in the first term in Mark Hall

Measurement scale	Used services		Did not use services		p
	N	Mean	N	Mean	
Self-esteem	17	25.8	194	27.4	0.228
Resilience	18	14.6	198	14.6	0.984
Emotional well-being	17	10.9	206	11.9	0.341
<i>Peer relationships</i>	18	14.6	206	15.9	0.070
Family relationships	19	14.8	202	15.7	0.342
School environment	18	11.8	202	11.7	0.911
Community environment	18	11.2	199	12.8	0.137

Table 23: Baseline well-being at Mark Hall school by sex

Measurement scale	Male		Female		p
	N	Mean	N	Mean	
Self-esteem	108	27.4	101	27.4	0.977
Resilience	111	14.8	103	14.4	0.295
<i>Emotional well-being</i>	113	12.4	108	11.3	0.030
<i>Peer relationships</i>	114	15.3	108	16.4	0.006
Family relationships	115	15.8	104	15.5	0.492
<i>School environment</i>	112	11.0	106	12.5	0.004
Community environment	111	12.7	104	12.7	0.939

Appendix 4: Steering committee

Table 24: Members of the steering committee

Steering committee member	Organisation
Gwyther Rees	The Children's Society
Dr John Ivens	Bethlehem and Maudsley Hospital School
Professor Ann Buchanan	Oxford University
Nicola Steuer	new economics foundation
Marcia Brophy	The Young Foundation
Alison Pollard	Big Lottery Fund

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Bethlehem and Maudsley Hospital School	Dr John Ivens
Big Lottery Fund	Stacy Sharman and Alison Pollard
Flixton Girls School	Nicola Gregson
Hertfordshire County Council	Caroline Tapster
Institute of Psychiatry	Professor Robert Goodman
Laidlaw Youth Trust	Maureen McGinn
McLaren High School	Peter Martin
new economics foundation	Nicola Steuer, Sam Thompson and Jody Aked
New Philanthropy Capital	Kathleen Duncan, trustee
NHS Health Scotland	Dr Jane Parkinson
NSPCC	Dr Jeff Mesie and Paul Whalley
Oxford University, Department of Social Policy and Social Work	Professor Ann Buchanan
Oxford University, Department of Education Studies	Professor Herbert Marsh
The Children's Society	Gwyther Rees
The Nuffield Foundation	Sharon Witherspoon and Caroline Bryson
The Outward Bound Trust	Emma Ferris
The Place2Be	Benita Refson, Wei Xu, Clare Tiley, James Hawkins, Frances Griffin, Rachel Campling and Prudencia Woode
The Prince's Trust	Ginny Lunn, Julie Skipp and Dani Lee
The Young Foundation	Marcia Brophy
Tomorrow's People	Fiona Greig
University of South Carolina	Professor Scott Huebner
York University	Professor Jonathan Bradshaw

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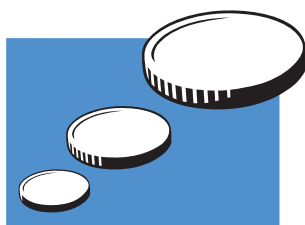
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