Step2Get:
Use of incentivisation to influence behaviour change among London secondary school children for road safety, sustainability and health

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Abstract: Use of incentivisation to influence behaviour change among London secondary school children for road safety, sustainability and health

Background
The study assessed the impact of two walk to school schemes installed by Transport for London and Intelligent Health in London, UK from 2009 to 2010. In Wimbledon TfL installed the scheme (Step2Get) to encourage girls to walk rather than use the free public bus. This was due to severe congestion and overcrowding at peak times. In Bexley Step2Get was installed to divert boys away from a dangerous crossing point and lead them to a safer place to cross the main road.

The Study
A series of battery operated receivers containing NFC mobile technology (CredX®), were attached to sign posts along the walk route. Each child was issued with an RFID card at the start of term which they swiped on the receivers as they walked to school. This verified a completed walk. The data was collected by the receiver and transmitted by GPRS to a central database and displayed on the child's own website. When they completed a certain number of walks they redeemed a reward that included cinema tickets or shop vouchers. The Step2Get website allowed the child to see how they were progressing and how their form is doing compared to other forms.

Results
Surveys at a key bus stop in Wimbledon showed that the average dwell time between 0750 am and 0820 am fell by 62% from 115 secs before the trial to 72 secs during the trial;
The number of pick ups during the same morning period fell by 57% from 398 to 149; Out of the 287 children who registered for the scheme 130 (45%) said they would switch to walking from other means of transport.

Conclusion
NFC technology combined with rewards has helped children at secondary school to change their mode of travel from bus and car to walking. The system can also be used to re-route children away from dangerous junctions to safer crossing points. The use of incentivisation is a promising and new area of work that needs further trials.

Biography

Dr William Bird

Dr William Bird MBE, has pioneered the research and promotion of physical activity, the natural environment and sustainability as a health benefit for over 15 years. Author of several research papers and invited as a keynote speaker on physical activity around the world, he has influenced current thinking on the benefits of outdoor physical activity.

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Introduction

Would a shopping trip to TopShop or a cinema visit encourage your children to walk to school?

The debate around the decline of our children walking to school continues to run. Would more children walk to school if there were greener, safer walking routes? Could we reduce the peak demand and stress on our public transport network if more children took to the streets and save money on more buses or new insfrastructure? Or do we just need to try something new like offering them the latest pair of shoes or a trip to see their favourite action hero for them to try it out?

These are a few of the questions that the Smarter Travel Unit at Transport for London wanted to find the answer to when they embarked on 'Step2Get' in partnership with Intelligent Health.

The Step2Get walking incentive scheme seeks to provide a cost effective solution to managing demand for transport operations. Participants in the scheme earn rewards by walking along a designated route. By managing the demand for travel and influencing behaviour, Step2Get can reduce the severity of crowding in public spaces or on transport, the antisocial behaviour that is often a by-product of that crowding, and by encouraging people to follow a specific route, safer route. In doing so, the need for new infrastructure or network enhancements can be delayed or even removed.

Methodology

Pilot schemes

Step2Get pilot schemes were carried out in two separate locations: Wimbledon, using an all girls school in south west London; and Bexleyheath using an all boys school in south east London.

These pilots were designed to demonstrate the benefits of incentivised walking schemes for two different scenrios and any difference between take up among boys and girls of all age groups.

Pilot 1: Wimbledon

Hundreds of school children congregated and socialised in Wimbledon Town Centre before and after school each day. At peak times this resulted in crowding on buses and at bus stops, causing operational issues for London Buses and potential intimidation for passers by.

This pilot aimed to demonstrate that by encouraging children to walk to school or to arrive at school earlier (focusing only on the morning school run), these problems could be alleviated without increasing the capacity of bus services or increasing the levels of policing.

Pilot 2: Bexleyheath

This pilot was designed to improve road safety outside a secondary school in Bexleyheath. Pupils at the school had been crossing a busy three-lane carriageway, often in an uncontrolled manner away from pedestrian crossings, to reach Bexleyheath town centre or the bus stop opposite the school. There have also been crowding issues at the bus stop where buses take many pupils on the short journey to the town centre. To make the situation worse, pupils often do not use the designated crossing to reach the bus stop. Pupils have been involved in a number of traffic accidents along this stretch of road over recent years.

The goals were similar to the Wimbledon pilot, but here the focus was on encouraging children to walk the safest route from school, as well as encouraging mode shift from bus use to walking.

Implementation

Details of the pilot schemes

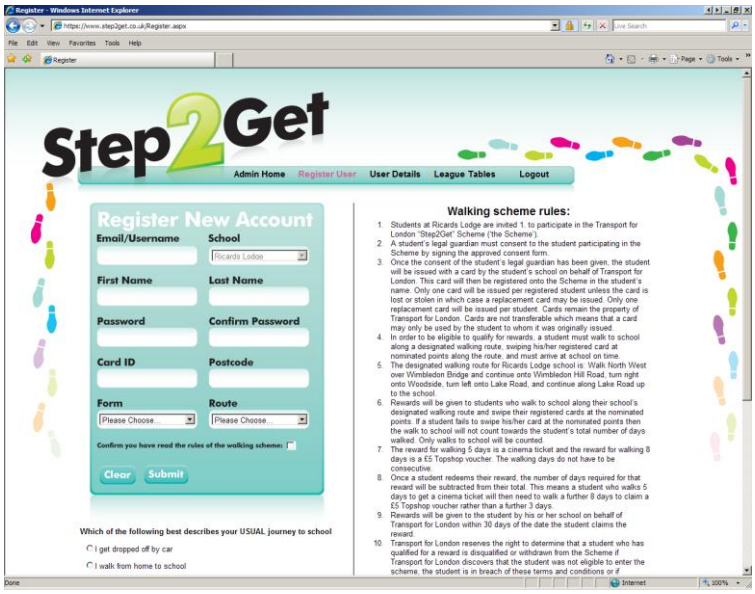
Following a period of research and student interviews, project deliverables were drawn up for each school to influence travel behaviour.

Pilot 1: Step2Get used the swipe card technology designed by Intelligent Health. This allows students to record that they had walked to school by swiping three 'swipe units' on their route from the town centre or station. After walking a certain number of days, students can then redeem rewards. In total, 299 students registered on the scheme (approximately a quarter of the students in the school), with a peak of 123 participating a week.

Pilot 2: To encourage walking the safest route, three swipe units were installed – the first two on either side of the safest, shortest pelican crossing, with the third located to discourage students walking through a car park. TfL's Safety & Citizenship team launched the scheme at special educational assemblies for each year group, hitting home the safety message behind the scheme with assistance from the local Safer Transport Team. In total, 290 students registered on the scheme (approximately a third of the students in the school), with a peak of 184 participating a week.

What did we do and how did it work?

Pupils register for the scheme with parental consent. The details of each participant are loaded onto a onto a database via the Step2Get website.



Each participant is given a unique radio frequency identity (RFID) card which operates in a similar way to an Oyster card. The student swipes their card at 'swipe points' (small, robust boxes attached to existing street furniture) along a route to/from school with the data being sent via mobile phone technology to the central database.

The boxes are known as 'receivers' and are designed, installed and maintained by Intelligent Health. They use the latest mobile phone technology to track a journey. By touching the card at swipe points we can know when a pupil starts and finishes their walk and how long it took them. They are then awarded a point which appears on their individual account. The receivers are installed along safe, green walking routes.

Participants can log on to the website to monitor their progress: the number of days that they walked the route, and how many more days' walks are required before earning a reward. Once a student reaches the required number of 'walks', a button appears allowing them to 'redeem your reward'. An automated email is sent from the website to inform the school as to which students have earned and redeemed rewards. The student then collects the reward from the member of school staff charged with administering the scheme.

Results

Summary of results

- Two Step2Get walking incentive scheme pilots have demonstrated that, by incentivising secondary school children to walk to/from school, it can reduce the severity of crowding in public spaces or on transport, the antisocial behaviour that is often a by-product of that crowding, and by encouraging people to follow a specific route, increase road safety.
- There are up to 57 schools in 19 boroughs experiencing problems that Step2Get could potentially tackle. Further investigation is required to ascertain Step2Get's applicability in each case.
- The modal shift from bus use to walking is in the region of 18 per cent of the target market (the student population of a school taking part in a Step2Get scheme).
- The evidence of sustained behaviour change post-scheme is mixed. Ensuring sustained behaviour change means sustaining Step2Get. Sustaining Step2Get means making it more cost effective – competitive advantage over other schools should replace material rewards as the primary incentive.
- The average cost of any future Step2Get scheme at a school is approximately £10K per annum – the majority of that cost is for rewards.
- Financial benefits vary depending on the stakeholder. If a scheme was funded solely by TfL, the cost/benefit ratio to TfL would be 1:12; if funded by a local authority: 1:10.
- A consultation campaign is required to identify the level of buy-in from Boroughs. Boroughs should be invited to pitch for the role of a Step2Get stakeholder-partner, committing resources but likely funded through LIPs.
- To roll Step2Get out to more schools, another procurement exercise is required to enlist the necessary supplier(s). One favoured procurement option is for TfL to secure supplier frameworks that Boroughs can 'call off' – TfL would take on the procurement but the contract would be between the Borough and the supplier(s) at no cost to TfL. The procurement route taken depends on the resources TfL wants to commit and the control it wants to maintain.
- The Bexleyheath pilot recorded an 18 per cent reduction in number of students boarding buses.
- In summary, the achievable level of modal shift from bus to walking is in the region of **13-18 per cent** of the target market.

Financial benefits

- If all stakeholders were to contribute to funding a Step2Get scheme in proportion to the costs they would avoid, the £10K cost of a scheme could be divided as follows, giving an overall cost/benefit ratio:

Stakeholder	**Average cost avoided (£ p.a.)**	**%age of total costs avoided**	**Cost (£ per annum)**	**Cost/benefit ratio**
TfL	127,500	52	5,200	**1 : 24.5**
Bus Operators	1,128	0.5	50	
Local Authority	106,666	43.5	4,350	
Police	10,176	4	400	
All stakeholders	245,470	100	10000	

Non-financial benefits

For schools and students

Timely attendance: In addition to the original project objectives, a number of further benefits to the schools and their students have also been observed in the Wimbledon pilot. One such benefit

is the reduction in the number of students arriving late to school each day. The Step2Get system can be programmed to discount swipes outside or set times, so participants are encouraged to complete the route in a designated timeframe. Also, by encouraging students to arrive at school earlier for free breakfasts and 'The Space', and to try walking rather than wait for a last minute bus, many students who were previously late to school are now arriving on time. This improvement helps school staff to spend less of their time managing late arrivals, and also allows them to take registration and start teaching on time.
Student engagement: Carrying out a project which included all year groups within the school helped to achieve a high level of youth engagement while also encouraging improved student cohesion. Not only were we able to engage with students in a way that made them interested to try more sustainable travel behaviour, but we also provided an opportunity to meet new people from across all year groups, and make new friends in the process.

For schools, local authorities and TfL
The participating stakeholder-partners all stand to benefit from an improved reputation in the local area, from both the publicised efforts of implementing the scheme and any perceived achievement in scheme objectives.

For local authorities
Fulfilment of statutory requirements: By implementing Step2Get locally, a local authority would help to fulfil its statutory requirements. The Education and Inspections Act 2006 (clause 76, part 6) places a general duty on local authorities to promote sustainable travel for journeys to, from and between schools and other educational institutions. The Act defines sustainable modes of travel as those that the local authority considers may improve the physical well-being of those who use them, the environmental well-being of all or part of the authority's area, or a combination of the two. Local authorities produce Sustainable Modes of Travel Strategies (SMoTS) to help fulfil their statutory obligations.
Engagement: Step2Get can provide local authorities with a sought after 'way in' to local schools, introducing and strengthening mutually beneficial relationships of influence and cooperation.

Other benefits
Depending on the issues being addressed, Step2Get can help to achieve:

- Increased road safety
- Increased levels of active, healthy travel
- Safer streets for drivers and buses
- Reduced stress for bus drivers
- Increased safety assurance for parents and school staff
- Reduced numbers of non-fee-paying customers
- Reduced traffic congestion due to reduced bus dwell times in typical circumstances, and less buses in operation where Step2Get replaces additional buses on a route
- Environmental benefits as a result of a reduced use of motorised transport and the resulting reduction in congestion