

Bikeability cycling outcomes pupil survey proof of concept

Do Bikeability-trained children cycle more than untrained children?

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Introduction

The stated policy purpose of Bikeability cycle training is to get more people cycling, more safely, more often. In England Bikeability is funded by the Department for Transport and Transport for London and offered free (with parental consent) to about 50% of primary school children, mostly in urban and suburban settings. Most training occurs during school time in years 5 and 6 and is delivered at Bikeability levels 1 (off-road bicycle handling skills) and 2 (on-road cycling skills).¹ Achievement of the National Standard outcomes² which underpin Bikeability at level 2 certify children's ability to cycle consistently, competently and confidently on quieter roads and simple junctions over short distances.

Most journeys to school fit this description, but nationally there has been little change in the low number of children who cycle to school: the latest National Travel Survey data (for 2011) show that only 1% of primary school children and 3% of secondary school children cycle to school.³ And there is little evidence showing Bikeability-trained children cycle to school (and other places nearby) more than untrained children. In 2010, Cycling England commissioned a survey comparing Bikeability-trained pupils with untrained pupils in years 5 and 6, which suggested trained pupils were more likely to cycle at least once a week (88% vs 80%) and always or sometimes cycle on the road (64% vs 38%),⁴ however methodological issues make the findings difficult to generalise. In 2012, the Department for Transport published research comparing school census travel data with Bikeability delivery data in local authority areas with different histories of Bikeability delivery,⁵ but, apart from promising findings for Hertfordshire schools, it reported little overall difference in pupils cycling to school (averaging 2% for all areas). Six years after its launch, we still don't know if Bikeability is achieving its stated policy purpose.

Study design

Commissioned by Cambridgeshire County Council and conducted in Cambridge, the cycling capital of England, this proof of concept study attempted to fill this gap by testing a new approach to collecting evidence comparing the cycling behaviours of Bikeability-trained and untrained children. An online survey⁶ was developed which purposefully borrowed questions from national travel surveys, such as the

¹ <http://www.dft.gov.uk/bikeability/> (accessed May 2013).

² <http://www.dft.gov.uk/bikeability/publications/> (accessed May 2013).

³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/35738/nts2011-01.pdf (accessed May 2013).

⁴ www.dft.gov.uk/bikeability/download/78 (accessed May 2013).

⁵ www.dft.gov.uk/bikeability/download/81 (accessed May 2013).

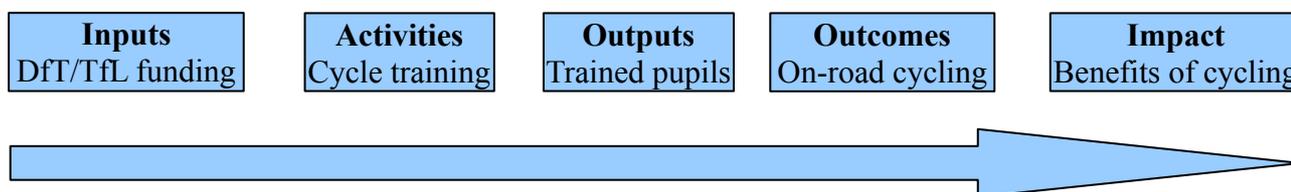
⁶ <http://www.surveymonkey.com/s/8DDD9KP> (accessed May 2013).

National Travel and Active People Surveys,⁷ to enable benchmarking. Schools were incentivised to administer the survey with pupils in ICT class time in return for a summary school-level data report. This delivered a high response rate and assured independent data collection by schools rather than Bikeability instructors (whose interest is conflicted). The survey was promoted as a 'travel survey' rather than a 'Bikeability survey' in order to collect data from non-trainees and mitigate against optimism bias. The simple, multiple choice questions were easy for children to answer in five minutes and with direct data entry by pupils and administration by schools, the survey was very low cost to operate and the software (Survey Monkey) cheap and simple to use.

The four participating schools were mixed (boys and girls) and located in the same urban area. They ranged in size from 117 to 481 pupils and had deprivation scores ranging from 29.9% to 49.7%.⁸ Over two weeks (18 - 28 March 2013), 224 responses were received from a total population of 320 pupils in Years 5 and 6 (70% response rate). In Cambridgeshire most Bikeability training is delivered in Year 6. In two of the schools training for almost all Year 6 pupils had taken place (in Autumn term for one and Spring term for the other). The 'treatment' group thus comprised 68 pupils (30.4% of all respondents, 38 boys and 30 girls), while the 'comparator' group comprised untrained pupils in Year 5 (105, 46.9%) and all the Year 6 pupils in the two schools where training had not yet occurred (51, 22.8%). The total sample was evenly split between boys (109, 48.7%) and girls (115, 51.3%).

Outputs, outcomes, impact

Before considering the survey results, it is important to understand the difference between the National Standard outcomes and 'cycling outcomes' reported here. In logic modelling terms, the number of children achieving the National Standard outcomes, alongside the number of children participating in training, are the main 'outputs' of Bikeability training 'activities'. Cycling 'outcomes' refers to the occurrence of cycling which may result from the training 'outputs', and which could lead to a range wider 'impacts' on public health, local transport and the environment. The causal links between these elements are illustrated in the following simple logic model for Bikeability:⁹



In order to associate any observed cycling 'outcomes' with the cycle training 'activities' and their 'outputs', it is important to establish what would have happened without the training (i.e. the counterfactual). The proof of concept study did this by comparing the following cycling 'outcomes' (i.e. cycling behaviours) of trained and untrained children: normal cycling frequency; normal and preferred cycling to school frequency; normal cycling to other local places; cycling on the road; and confidence cycling on the road.

⁷ http://www.sportengland.org/research/active_people_survey.aspx (accessed May 2013).

⁸ <http://www.education.gov.uk/edubase/home.xhtml;jsessionid=B22D903C37E00BC220E8738323893BFC> (accessed April 2013), <http://www.education.gov.uk/schools/adminandfinance/financialmanagement/schoolsrevenuefunding/archive/a0014385/school-funding-deprivation-indicator> (accessed April 2013).

⁹ For more on logic modelling, see <http://www.wkkf.org/knowledge-center/resources/> (accessed May 2013).

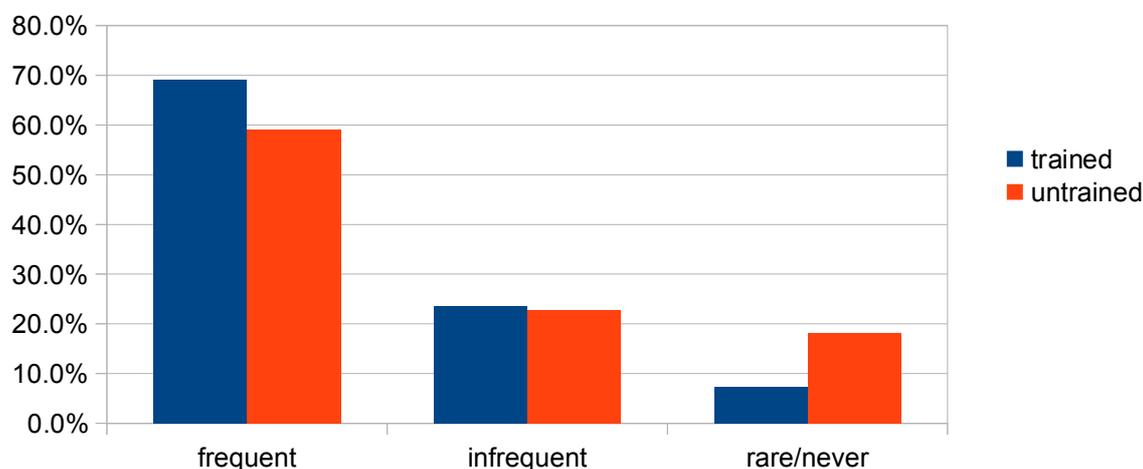
Findings

Normal cycling frequency

Analysis of the survey responses adopted an aggregate four-point scale to measure cycling frequency:¹⁰ cycle frequently (at least once a week); cycle infrequently/occasionally (less than once a week, more than once a month); cycle rarely (less than once a month; never cycle (do not cycle). A large majority (64.1%) of children reported frequent cycling overall, but by 10.1% more trained pupils than untrained pupils. Conversely, a small minority (12.7%) of children reported rarely or never cycling overall, but by 10.8% more untrained than trained pupils. Trained and untrained pupils reported little variation from the 23.2% average for infrequent/occasional cycling. Overall, the evidence shows that more trained than untrained children cycle.

Cycling frequency: trained vs untrained pupils

(n = 217)



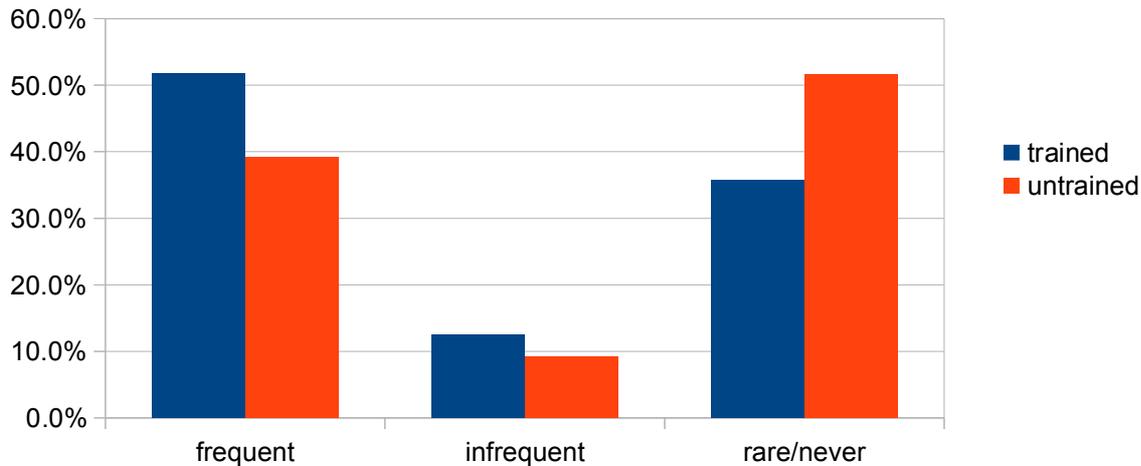
Normal and preferred cycling to school frequency

Analysis of the survey responses adopted the same aggregate four-point scale to measure the frequency of cycling to school, and a four-point scale to measure the distance travelled, and used Google Maps to calculate distances between school and domicile postcodes. Overall, the vast majority (91.0%) of all children lived within two miles of school, with little variation between trained and untrained pupils. A large proportion (45.5%) of children reported normal frequent cycling (i.e. at least once a week) to school overall, but by 12.6% more trained pupils. Conversely, a similar proportion (43.7%) of children reported rarely or never normally cycling (i.e. less than once a month) to school overall, but by 16.0% more untrained pupils. Trained and untrained pupils reported little variation from the 10.8% average for normal infrequent cycling (i.e. at least once a month) to school. Overall, the evidence shows more trained than untrained children cycle to school.

¹⁰ Valid responses mirror those used in the National Travel and Active People Surveys.

Normal cycling to school frequency: trained vs untrained pupils

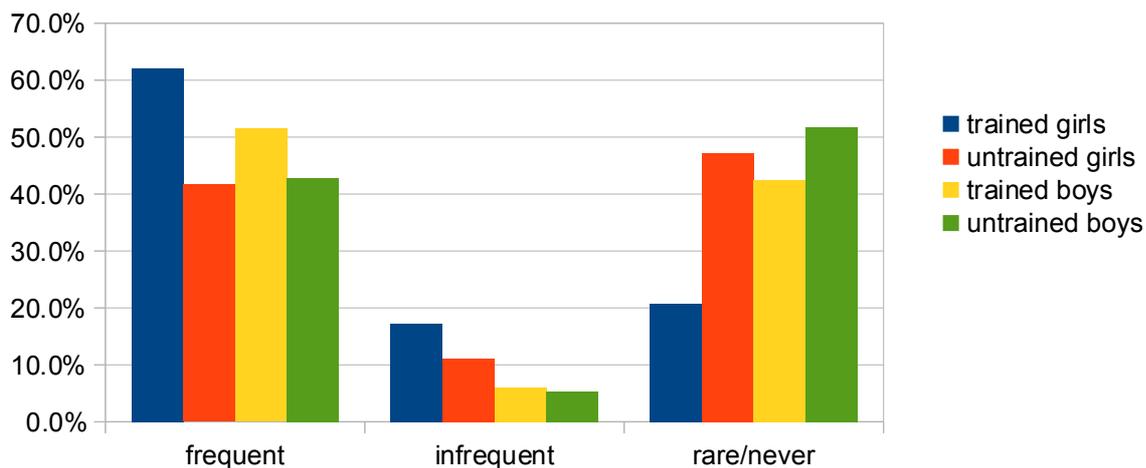
(n = 176)



A marked difference in the cycling outcomes for trained girls was observed. There was little variation between boys and girls from from the overall of 42.3% of untrained pupils who reported normally cycling frequently to school. However, 20.4% more trained girls than untrained girls normally cycled frequently to school, and 10.6% more trained girls than trained boys normally cycled frequently to school. Conversely, trained girls were much less likely to cycle only rarely or never to school, compared with untrained girls and with trained and untrained boys. Overall, the evidence shows girls demonstrate the greatest difference between trained and untrained children cycling to school.

Cycling to school frequency: trained vs untrained boys and girls

(n = 190)

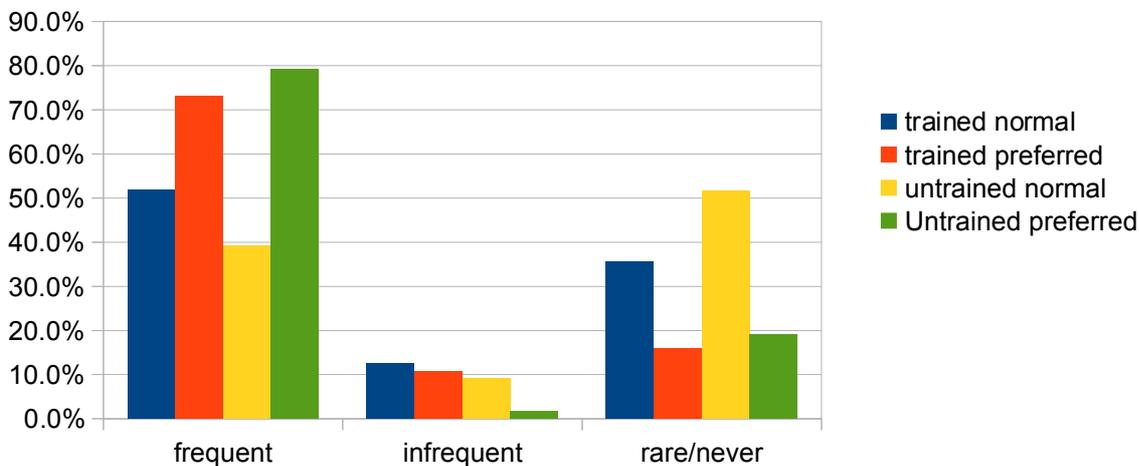


The majority of respondents (76.2%) would prefer to cycle to school frequently (i.e. at least once a week), compared with 45.5% who normally do so (a difference of 30.7%). Conversely, only 17.6% of respondents would prefer to cycle to school rarely or never, compared with 43.7% who normally do so (a difference of 26.1%). The largest differences between normal and preferred cycling to school frequencies were reported by untrained pupils: 40% more untrained pupils preferred to cycle to school frequently than those who normally did so; and 32.5% fewer untrained pupils preferred to cycle to school rarely or never

than those who normally did so. Overall, the evidence shows more untrained than trained children prefer to cycle more than they normally do.

Normal and preferred cycling to school frequency: trained vs untrained pupils

(n = 176)

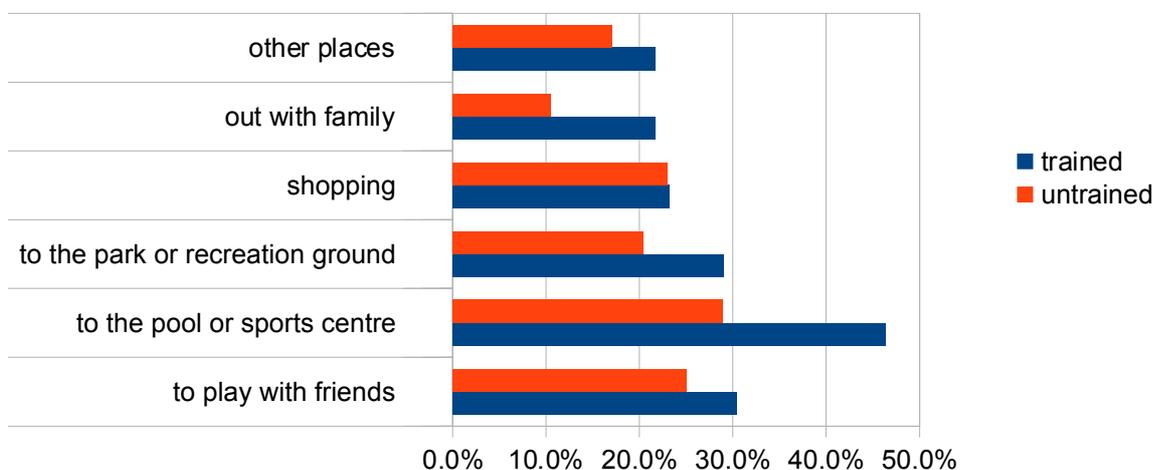


Normal cycling to other local places

Overall, 7.9% more trained than untrained pupils normally cycled to a wide range of other local places, but with variations according to different destinations. In particular, 17.4% more trained than untrained pupils normally cycled to the pool or sports centre, and 11.2% more trained than untrained pupils normally cycled when going out with their families. Overall, the evidence shows more trained than untrained children normally cycle to local places.

Normal cycling to local places: trained vs untrained pupils

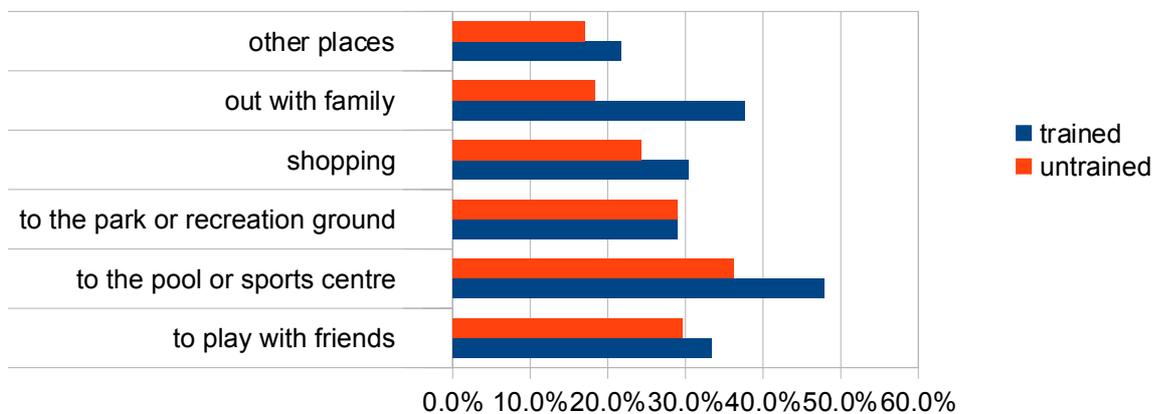
(n = 221)



When asked how they would prefer to travel to these local places, trained and untrained pupils both preferred to cycle more than they normally do. It is noteworthy that 21.7% of trained pupils normally cycled when going out with their family (compared with 10.5% of untrained pupils, a difference of 16.1%), and that 37.7% of trained pupils preferred to do so (compared with 18.4% of untrained pupils, a difference of 19.3%). It is also noteworthy that 46.4% of trained pupils normally cycled to the pool or sports centre (compared with 28.9% of untrained pupils, a difference of 17.4%), and that 47.8% of trained pupils preferred to do so (compared with 36.2%, a difference of 11.6%). The cycling experience and preference when going out with family reported by trained pupils contrasts strongly with the experiences and preferences reported by untrained pupils. Overall, the evidence shows more trained than untrained children prefer to cycle to local places and out with their families.

Preferred cycling to local places: trained vs untrained pupils

(n = 221)

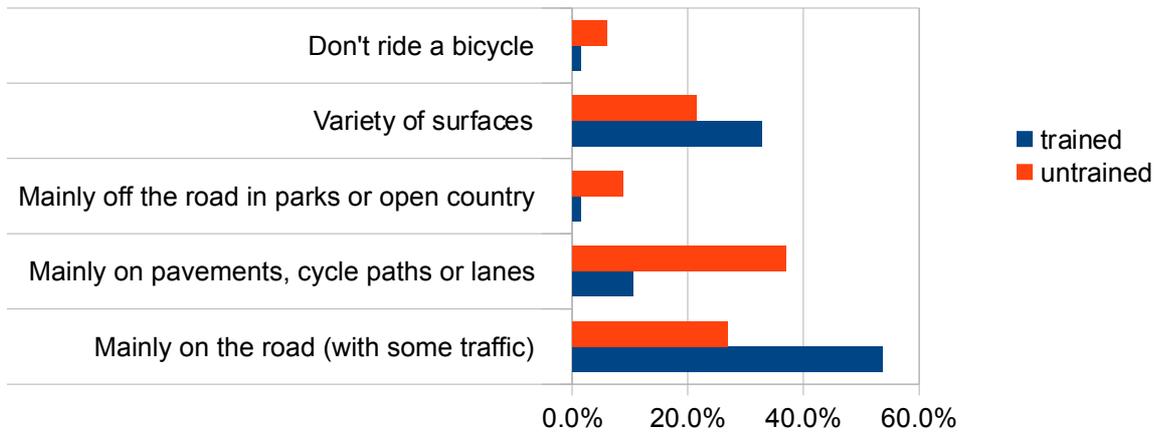


Cycling on the road

Overall, 40.3% of all respondents (trained and untrained) mainly cycle on roads with some traffic, compared with 23.7% who mainly cycle on pavements, cycle paths or lanes separated from traffic, and 5.1% who mainly cycle off road in parks or open country. A further 27.2% mainly cycle on a variety of surfaces, and 3.8% did not ride a bicycle. However, within these responses large differences were observed between trained and untrained pupils. More than half (53.7%) of trained pupils mainly cycled on the roads with traffic, compared with 26.8% of untrained pupils, and only 10.4% of trained pupils mainly cycled on pavements, cycle paths or lanes separated from traffic, compared with 36.9% of untrained pupils. Overall, the evidence shows more trained than untrained children cycle on the road and not on pavements.

Where children normally cycle: trained vs untrained pupils

(n = 216)

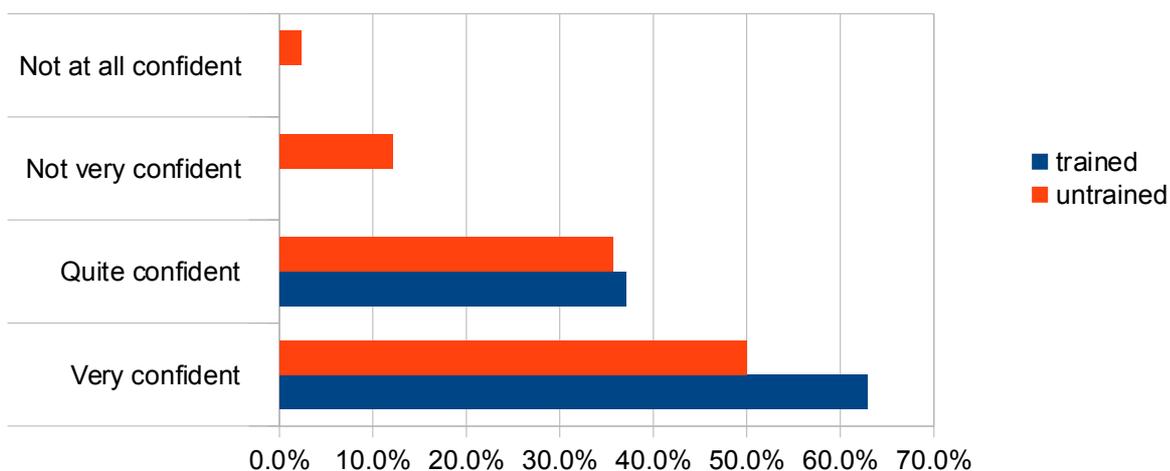


Confidence cycling on the road

Overall, nearly all (92.8%) respondents (trained and untrained) felt either 'very' or 'quite' confident cycling on the road, and only 7.2% felt 'not very' or 'not at all' confident. However, within these responses large differences were observed between trained and untrained pupils. All of those who reported feeling 'not very' or 'not at all' confident were untrained pupils, and nearly two thirds (62.9%) of trained pupils were 'very confident' compared with 50.0% for untrained pupils. Overall, the evidence shows more trained than untrained children feel confident cycling on the road.

On-road cycling confidence: trained vs untrained pupils

(n = 194)



Conclusion

The primary purpose of this proof of concept study was to begin filling the gap in evidence assessing the impact of Bikeability cycle training on children's cycling. It did this by designing, administering and analysing responses to an online pupil survey collecting primary data on children's cycling behaviour.

The study design

The online pupil survey has shown itself to be an effective, efficient and economic research instrument for collecting useful data from trained and untrained pupils. Completing the survey took five minutes, and teachers were willing to administer it using school laptops in ICT class time. Providing summary data reports of data returned by their pupils has proved to be effective incentive for schools that has contributed to a very high response rate. Moreover, parents willingly consented for their children to participate in the survey in response to a letter (drafted by the researcher) from their school explaining its importance and value to the school. The survey form itself could be improved by splitting composite questions to facilitate data analysis and making all questions mandatory, in order to prevent respondents skipping some questions.

The survey findings

The survey findings presented in this report are based on simple frequency analysis. They show for schools in Cambridge where Bikeability is delivered:

1. more trained than untrained children cycle
2. more trained than untrained children cycle to school
3. girls demonstrate the greatest difference between trained and untrained children cycling to school
4. more untrained pupils than trained children prefer to cycle more than they normally do
5. more trained than untrained children normally cycle to local places
6. more trained than untrained children prefer to cycle to local places and out with their families
7. more trained than untrained children cycle on the road and not on pavements
8. more trained than untrained children feel confident cycling on the road.

With data from more schools, regression analysis would enable the following questions to be answered:

- ⤴ Does training predict children's cycling?
- ⤴ What additional factors mitigate or amplify any effects of training on cycling?
- ⤴ For those who rarely or never cycle, what are the factors in their behaviour choice?
- ⤴ Along with training, what are the key factors in predicting cycling confidence?
- ⤴ What is the relationship between distance to school and cycling frequency?
- ⤴ What factors influence this relationship?

Recommendation

With a few tweaks, the study design and online survey appear to be capable of producing useful data for more sophisticated analysis at very low cost. It is acknowledged that with its high levels of cycling and facilities investment, Cambridge is an usual town in which to observe cycling. It is therefore recommended that the study design and online survey form are piloted in other parts of the country, including London boroughs, metropolitan borough councils, and shire counties. The Association of Bikeability Schemes, with its membership of local scheme organisers, is the best-placed organisation to recruit schools and manage the pilot.