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CYCLE TRAINING IN SCOTTISH SCHOOLS: LEARNING FROM INTERNATIONAL PRACTICE

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1. INTRODUCTION

This report provides an overview of cycle training programmes for school children in several countries to inform Cycling Scotland of different international practises and possible ways to develop existing cycle training. Comparing cases with diverse cycle cultures provides insights into how training works in different contexts and can act as a template for training in Scotland to develop as does cycle culture and rates of cycling.

Prior to looking at the specific cases in detail, we offer our view on cycle training for children which has informed and directed this study. Cycle training is a broad term which can encompass a range of actors and situations, as well as an individual's experience and observations. Training can take place in a formal setting when delivered by institutions such as schools, NGOs or private organisations. Informal settings can play a role in cycle education too. Many children's first experience of cycling without stabilizers may be done in an informal manner, helped by un-trained adults. On a personal level, riding and watching others cycle will unconsciously train an individual, informing personal habits and abilities when on a bike. Such a broad understanding helps remind us of the possible settings in which training can occur and the variety of people who can play a part in teaching.

Cycling and cycle training are social practices. The ways these things are done, by whom, and where, can vary between different contexts. Some social practices are conflicting. For a parent, commuting by car makes it difficult to cycle to school with his or her child – a valuable experience for a child to develop the physical strength and awareness needed to ride in traffic alone. Whereas certain practices and behaviours can support others: playing outside supports learning to cycle and awareness of others in public space.

The practise of cycle training has been implemented in a range of formal ways by schools around the world. In this setting, the audience are captive and there is a chance to deliver a standardised programme to equip children with the skills to deploy cycling outside their school. However, within formal education systems around the world the value of play as a way to learn seems to have lost ground, although academic research supports the idea that a play-based approach enhances the development of the brain.¹

Additionally, there is evidence that early play-based learning helps to develop creativity, problem-solving and empathy.² When riding a bicycle in traffic these skills are important. Of course, there are rules to obey as a road user, but a degree of creativity, problem-solving and empathy are needed to actually ride a bike safely in traffic since not all road users always stick to the rules, making adaptability important. Also, traffic situations are not always self-evident and in the moment rules may not help. And people make mistakes, making it important to develop emphatical skills that can be used in traffic situations.

Based on this view, if the goal of cycle training is to ready pupils for cycling on the road with other traffic, the element of play within the training itself must not be lost. Such an approach will not only make the programme more engaging for students, but it will also provide people with the tools to be responsive and competent cyclists.

The following pages introduce the countries from which the cycle training programmes are selected. First, the methodology responsible for selecting the countries is put forward before a detailed look into each countries

¹ Pyle, Angela. 2018. *Play-based learning, Synthesis p.5-6, Encyclopedia on Early Childhood Development*

² Pyle, Angela. 2018. *Play-based learning, Synthesis p.5-6, Encyclopedia on Early Childhood Development*



background. Doing so situates the contexts behind each training programme. This is followed by a short description of a workshop which was given in Glasgow that contributed to the production of this report. Upon doing this, six formal cycle training programmes for children are detailed. Finally, a summary of each training programme is given with recommendations for Cycling Scotland's approach to cycle training and the for the existing Bikeability Scotland programme.

This report was produced for Cycling Scotland to provide recommendations for cycle training in Scotland based on international practise. Due to this, Scotland and Bikeability Scotland have been included in the discussion as they help situate the final recommendations, making them more applicable to Bikeability Scotland and Scottish cycle culture in general. Furthermore, examining cycling training programmes for children from abroad intends to ignite a discussion within Cycling Scotland about the best way to develop cycle training. The recommendations are intentionally left open, lacking implementation timeframes and specific details, to provide a basis from which Cycling Scotland can create a workable strategy suitable for the Scottish context.

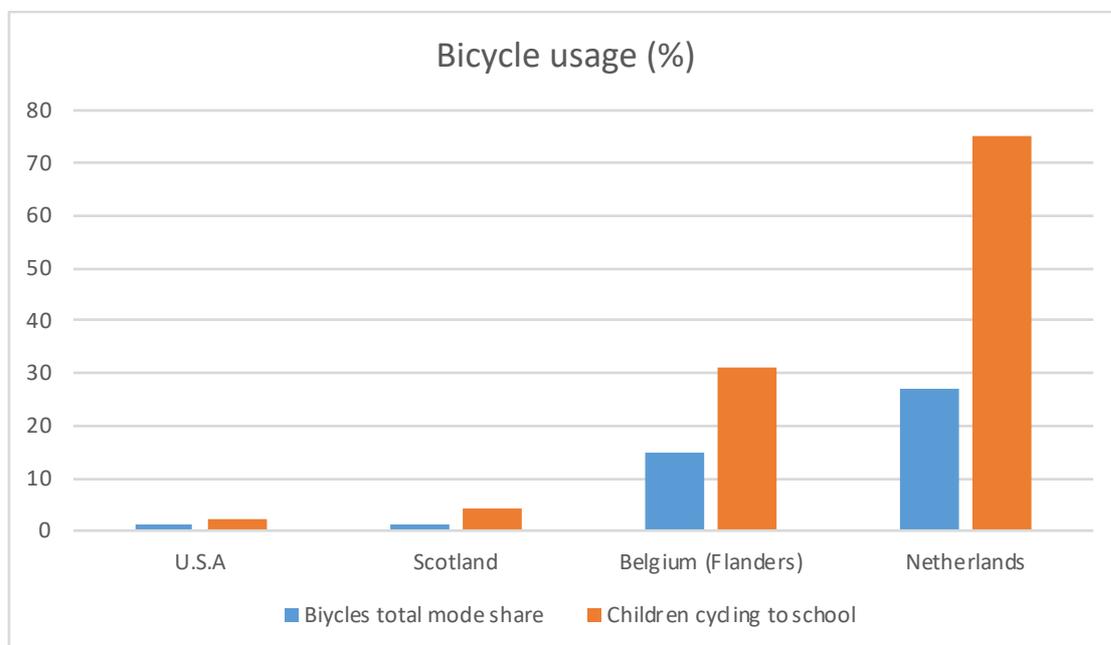




2. COUNTRY INTRODUCTION AND CASES

Before selecting individual cases, a method was devised to ensure that the examples used demonstrate a variety of approaches to educate children about cycling in different contexts. The framework used intended to identify low-rate cycle countries, mid-rate cycle countries and high-rate cycle countries. Taking examples from nations with different rates of cycling would ensure this variety. The lessons learned from each of the cases intend to provide a possible template for a country – such as Scotland – that aims to develop from a low-rate cycle country.

Categorising a country’s cycling levels was done using the simple measure of mode share. This figure demonstrates how widespread cycling is in each country. A cycling mode share of 0-9% is considered a low-rate cycle nation; from 10-19% is a mid-rate cycle country; and a cycling mode share of over 20% is a high-rate cycling country. This framework paved the way to select: the U.S.A., Belgium (specifically Flanders) and the Netherlands. As Scotland is the starting point for the study, it was also included.



The graph above clearly shows the variation between the chosen countries. It also shows that the percentage of school children (primary and secondary) cycling to school clearly corresponds with the overall cycling percentages. However, the mode share statistics do not tell the full story of the intricate cycling culture present in each of the selected countries.

Prior to offering a more detailed description of each country, it is important to make clear that cycling in Scotland or the U.S.A (low-rate countries) differs fundamentally to cycling in the Netherlands (high-rate country). In the low-rate cycle countries featured in this report, bicycles are required to behave like cars, sharing road space. This style of cycling is known as vehicular cycling and its main proponent, John Franklin, supports the notion that the safest way to ride a bike is with traffic, not when separated from it. His book *Cyclecraft* is recommended reading





for Bikeability Scotland instructors.³ Compare this to the Netherlands, where often the bicycle is physically separated from other traffic when speeds are above 30kphm (18.6mph) and is obliged to use the segregated facilities. Conventional bicycles and e-bikes are considered legally different from vehicles such as cars, vans and buses. This difference creates a gulf in the understanding of what cycling actually is. Such a large difference is vital to bear in mind when comparing cycle trainings in different countries; training reflects the type of cycling that is required in that setting. This significantly hinders the plausibility of 'copy and pasting' a cycle training from another context, however there are concepts, themes and ideas that can be taken from other educational programmes and effectively tailored to a given setting.

The following profiles look into each country's cycling culture and touch upon public health, well-being of children and school education. Providing a contextual background for each country, and the environment in which the cycle training is delivered in, facilitates more effective comparisons between training programmes. Ultimately, making the lessons which can be learned from each example more applicable to the Scottish context.

³ Franklin, John. 2014. *Cyclecraft*, TSO, 3rd Edition





2.1 Scotland

In Scotland, the bicycles national mode share is 1.2% according to averages from 2012-2015⁴ In Edinburgh, the city with most people travelling by bicycle, 3% of the population consider cycling their main mode of transport.⁵ These figures, published in 2017, position Scotland as a low-rate cycling country within this study.

The devolved Scottish government has control over transport and intends to increase bicycle usage by investing in active transportation. In 2017 the government announced that it would double spending on walking and cycling, taking the total annual spend to £80m. This financial push means that the devolved government now spends £13.50 per person on walking and cycling, the highest in the UK outside of London.⁶

Survey data from 2018 sheds light on state school pupils transport behaviours. 5.2% of primary school children cycle to school, this falls closer to the national average for secondary school pupils at 1.3%.⁷ There is potential to get more children cycling as 48% of children would like to cycle to school.⁸

While at school traffic education is not a mandatory part of the curriculum for children, but individual schools can incorporate it if they wish.⁹ Courses such as Bikeability Scotland can be given but there is no legal requirement for schools to cover cycle and road safety behaviour. Despite this, the Scottish Parliament recently expressed support for cycle training in a parliamentary motion passed on October 31st, 2017, stating: “every child should have the opportunity to benefit from cycle training.”¹⁰

In Scottish nursery schools, the Play on Pedals scheme is being upscaled after a positive start in Glasgow in 2014. Although this is not an explicit part of the curriculum it is closely linked to the Scottish Curriculum for Excellence. This was implemented in 2010 and focuses on three main areas: numeracy, literacy and health and well-being.¹¹ The document also refers to outdoor learning opportunities, opening a way to incorporate physical activity, the outdoors and play into children’s learning in the future.

A coalition of organisations including Cycling Scotland, Paths for All and Sustrans, have outlined steps to increase levels of cycling and walking in Scotland. These include promoting road safety, encouraging young people to travel actively, improving transport links and making cycling more accessible.¹² Elsewhere, Cycling Scotland and Cycling UK run campaigns to increase driver’s awareness of cyclists to make the roads friendlier for people on bikes.

⁴ *Annual cycling monitoring report 2017*

⁵ *Annual cycling monitoring report 2017*

⁶ <https://www.cyclinguk.org/press-release/2017-09-05/scotland-doubles-annual-funding-cycling-walking-£80m>

⁷ <https://www.sustrans.org.uk/scotland/hands-up-scotland-survey>

⁸ <http://ccea.org.uk/giro/docs/resources/Sustrans%20Active%20Travel%20Schools%20Programme/Transforming%20Young%20People%27s%20Travel.pdf>

⁹ <https://babyseat.fundacionmapfre.org/children/news/why-road-safety-subject-mandatory.jsp>

¹⁰ <http://www.parliament.scot/parliamentarybusiness/28877.aspx?SearchType=Advance&ReferenceNumbers=S5M-08497.1>

¹¹ <https://education.gov.scot/Documents/btc1.pdf>

¹² <http://transformscotland.org.uk/wp/wp-content/uploads/2015/06/Scotland-on-the-move-a-joint-manifesto-for-active-travel.pdf>



A 2013 UNICEF index ranked overall well-being of children in developed countries and the United Kingdom was placed 16th out of 29, no data is available specifically for Scotland. This ranking is above the United States whom featured at 26th. Interestingly, Belgium and the Netherlands, were both in the top 10.¹³

In terms of public health, a Scottish government report from 2016 stated 29% of adults were obese.¹⁴ Scottish children were found to be the most inactive in a comparative study of 38 other nations.¹⁵ The study found Scotland performs the worst in terms of levels of physical activity in children and time spent in front of screens.¹⁶ A possible explanation for children's behaviour could be due to changing attitudes of parents in the UK, 60% of whom believe the world is more dangerous than when they grew up.¹⁷ Only 43% of children under the age of 15 were allowed to play in a local park without adult supervision according to a 2010 survey.¹⁸

The UK government are responding to the high numbers of children who are at risk of becoming obese, with action being taken on sugary food and drink, advertisements and a broader plan for children's physical activity.¹⁹ This makes the task of getting children cycling more often a vital way to improve the health of the next generation of Scots.

Bikeability Scotland is a national programme delivered throughout Scotland. The scheme is supported by the Scottish government. This example will be looked at in detail in the following section.

¹³ ¹³ https://www.unicef-irc.org/publications/pdf/rc11_eng.pdf

¹⁴ <https://www.gov.scot/Publications/2017/10/2970/345749>

¹⁵ <http://www.activehealthykids.org>

¹⁶ <https://www.bbc.com/news/uk-scotland-37989247>

¹⁷ <https://www.telegraph.co.uk/news/uknews/7638919/Children-today-have-less-freedom-than-previous-generations.html>

¹⁸ <https://www.telegraph.co.uk/news/uknews/7638919/Children-today-have-less-freedom-than-previous-generations.html>

¹⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718903/childhood-obesity-a-plan-for-action-chapter-2.pdf



2.2 The United States of America

The U.S.A. is often given as the archetype car-centred country, this focus has made cycling a non-mainstream mode of transport. Nationally, less than 1% of people cycle to work.²⁰ Although it should be noted that in 2007, 0.3% of commuters cycled to work and in the course of nine years the figure had doubled to 0.6%. When you look at the 50 most populous cities alone, 1.2% of people cycle to work.

The numbers of people riding bikes differs from the national average when you focus on Washington D.C alone (the location of the cycle training programme which will be discussed later). The Washington Post reported a 3% increase in the level of people cycling to work in the city between 2000 and 2014, taking the bikes mode share to 4%.²¹ The latest figures show that slightly under 5% of trips to work are made by bicycle and more facilities are being built to accommodate cyclists.²²

The federal government allocates 1.6% of its transportation spending to walking and cycling projects.²³ An index which ranked every state's total spending on walking and cycling shows that Maryland, the state where Washington D.C is found, spends the least in America on such projects.²⁴

The American League of cyclists – a mass membership organisation promoting cycling – have a core aim of creating a bicycle friendly nation, demonstrating that cycling is still a marginal activity.²⁵ Their campaigns are focused on promoting the bikes legal status on the road.

Nationwide in 2009, 2.2% of school children were cycling to school.²⁶ There is no standardised national curriculum in the United States which means schools and districts can set their own standards to a large degree. Hence, it is hard to say how traffic education is taught within schools.

The Organisation for Economic Co-operation and Development (OECD) compared 35 developed countries and found the United States to have the highest levels of obesity: 38% of adults are classified as obese.²⁷ When looking at children specifically, a UNICEF report ranked the well-being of children growing up in America amongst the lowest in the developed world.²⁸ The research considered education, health and safety when ranking each country.

²⁰ <http://bikingandwalkingbenchmarks.org/>

²¹ https://www.washingtonpost.com/local/education/all-dc-public-schools-students-will-learn-to-ride-a-bike-in-second-grade/2015/09/23/22a0b356-6203-11e5-b38e-06883aacba64_story.html?noredirect=on&utm_term=.948362cc737c

²² <https://www.citylab.com/transportation/2017/12/how-washington-dc-built-a-bike-boom/548903/>

²³ <https://ecf.com/news-and-events/news/us-cycling-nation-us-states-and-cities-under-microscope>

²⁴ <https://www.aarp.org/content/dam/aarp/livable-communities/documents-2014/2014-Bike-Walk-Benchmarking-Report.pdf>

²⁵ <https://www.bikeleague.org/content/mission-and-history>

²⁶ <http://bikingandwalkingbenchmarks.org/>

²⁷ <http://www.oecd.org/health/health-systems/Obesity-Update-2017.pdf>

²⁸ https://www.unicef-irc.org/publications/pdf/rc11_eng.pdf



When selecting a cycle training programme to focus on from the U.S.A, numerous criteria were considered: where it is based, its applicability to Scotland, its similarity to Bikeability Scotland, the amount of information available and its unique features. Investigation into Norte, a Michigan based non-profit which focuses on children cycling to school, was carried out while compiling the country profiles and case information.²⁹ Eventually this case was excluded, despite the unique way it involves parents, because it is an extracurricular activity making it less relatable to training within the school day. The case selected from the United States is a cycling programme that has been incorporated into the curriculum of Washington D.C. public schools through a project called Cornerstones.

²⁹ <https://elgruponorte.org/>





2.3 Belgium

The following information will be taken mainly from the northern region of Belgium, Flanders. This region is where both of the cycle education programmes are located so it will form the basis of the country profile discussion. The bicycle accounts for 15% of the overall mode share in the Flanders region, positioning the area as a mid-rate cycling example.³⁰ When you look only at travel to and from schools, 31% of such trips are made by cyclists.³¹

Cycling union for Flanders and Brussels, the Fietsersbond, advocates for the creation of more cycle paths and giving more road space to cyclists. They are also engaged in a campaign to change traffic laws to better protect cyclists. Another campaign is targeting commuters, encouraging them to switch transport mode by making cycling fiscally attractive.³²

As of 2017, the Flemish Ministry of Mobility and public works spends a total of £92,430,427 (€103,000,000) on cycling infrastructure. This equals a total spend of £14.20 (€15.82) per person.³³ In addition, the Ministry of Education spends additional money on cycle training programmes, such as one of the examples discussed later.

Traffic education does feature in the national education curriculum. Guidelines set out expectations for toddlers and older students. First students should be able to grasp where is a safe area to play outside, know basic traffic rules and be aware of their environment. The curriculum explains that older students should know the rules for pedestrians and cyclists who use the road, be able to move along routes safely that are familiar to them and finally, consider other road users.³⁴

Across the adult population, 18% of Belgians are classified as obese.³⁵ While UNICEF ranked Belgian children 9th in the world for level of happiness and 13th for healthy and physical well-being.³⁶ When measured against international recommendations, 7% of Belgian 6- to 9-year-old children and 2% of 10- to 17-year-old adolescents meet the suggested requirements for daily physical activity.³⁷

A detailed assessment of cycling education courses 'Meester op de Fiets' and 'Mobiële Verkeerspark' will be conducted later, providing the examples from Belgium. A third example of cycle training which was not included is a course delivered by Belgian toy retailer Dreamland. The case demonstrates a private sector business, who sell bikes, taking responsibility for traffic safety based on the products they sell by teaching children between 4-

³⁰ http://www.fietsberaad.be/Kennisbank/Bijlagen/FietsDNA_2018_web.pdf

³¹ http://www.fietsberaad.be/Kennisbank/Bijlagen/FietsDNA_2018_web.pdf

³² <https://fietsersbond.be>

³³ <https://www.benweyts.be/nieuws/103-miljoen-euro-fietsinvesteringen-in-2017-110-miljoen-euro-als-ambitie-voor-2018>

³⁴ <https://www.onderwijsdoelen.be/basisonderwijs>

³⁵ <http://www.oecd.org/health/health-systems/Obesity-Update-2017.pdf>

³⁶ https://www.unicef-irc.org/publications/pdf/rc11_eng.pdf

³⁷ <https://www.activehealthykids.org/wp-content/uploads/2016/11/belgium-report-card-long-form-2016-en.pdf>



8 years old cycle training³⁸ Although the example highlights the diverse ways training can be delivered, it was unclear if the programme is still active and the level information required for inclusion is not readily available.

³⁸ https://www.nieuwsblad.be/cnt/blsva_20130403_001

<https://www.dreamland.be/e/nl/dl>





2.4 The Netherlands

The Netherlands is used as our example of a high-rate cycling country due to the bike accounting for 27% of all trips made in the country.³⁹ The numbers are higher when you specifically look at urban areas. Within cities it is not uncommon for over 35% of all trips to be made by bicycle.⁴⁰

The current state of affairs did not happen naturally. Historically, the country has had a large number of cyclists, dating back to the early 1900s, and the Dutch government have invested heavily to make cycling a safe and accessible activity. Per head, the state spends around £27 (€30) a year on cycling.

Across the country 75% of school children use a bike to get to school.⁴¹ It is far from unusual for children of 10 years old to be cycling to school by themselves or with friends. These high levels can be explained by the fact that many children begin cycling with their parents at a young age. Cycling is completely normalised as it is part of life in the Netherlands, which means that parents would not be considered irresponsible let their child cycle unsupervised. In the Dutch approach to road safety the infrastructure must be designed to protect people on bicycles as cycling in itself is not seen as a dangerous way to move around.

One of the Ministry of Education's core goals relates to teaching children how to be road users. Each school has the freedom to develop their own curriculum on traffic safety but the way it is taught is not monitored by the government and traffic education is not a compulsory part of teacher training. The Ministry of Infrastructure and Watermanagement however, tries to stimulate traffic education in schools as part of Sustainable Safety. It should be noted though that Dutch policy documents assume that children have learned the basic practical skills of riding a bike at home by age 6.

The Dutch cycling union are campaigning on many issues to improve cycling in the Netherlands. At the moment the key issues are: maintenance and widening of cycle paths, longer green phases for cyclists at traffic lights, anti-bike theft measures and removal of mopeds from cycle paths.

As for children's general well-being, UNICEF ranks Dutch children as the most satisfied in the world.⁴² Since, many have suggested the independent mobility that cycling provides could be one of a myriad of reasons why children are so happy. The country also performs well in terms of obesity rates with 12.8% of the adult population being overweight. However, if you deduct the time spent cycling from the average Dutch child's daily activity, the Netherlands would be similar to the European average in terms of children's physical activity levels.⁴³

Multiple cycle trainings were considered before settling on two cases which will be discussed at length in the following section. 'WegWijs VR' will feature first, then the 'Verkeersexamen' is used as the second example. There are three notable exclusions worthy of mention: First, The Hague's Safe Learning to Cycle programme

³⁹ <https://www.government.nl/documents/reports/2018/04/01/cycling-facts-2018>

⁴⁰ <https://www.government.nl/documents/reports/2018/04/01/cycling-facts-2018>

⁴¹ <https://bicycledutch.wordpress.com/2013/12/05/arriving-at-school-by-bicycle/>

⁴² https://www.unicef-irc.org/publications/pdf/rc11_eng.pdf

⁴³ <https://www.activehealthykids.org/wp-content/uploads/2016/11/netherlands-report-card-short-form-2016.pdf>



provides an interesting angle on the involvement of parents in cycle training and it is taken from an area with lower rates of cycling than the rest of the Netherlands.⁴⁴ Second, Utrecht based organisation Harten voor Sport was considered because part of its work teaches children about safe cycling using classroom based interactive gamification. And third, Van 8 Naar 1 helps children adjust to their new routes to school when they start secondary education.⁴⁵ However, it was felt that VR training reflects the technological cutting edge of cycle training currently being delivered in the Netherlands. While the Verkeersexamen is a historic case that remains the cycling rite of passage for school children.

⁴⁴ <https://www.verkeerinbeeld.nl/artikel/190618/ouder-en-kind-fietslessen-op-de-basischool>

⁴⁵ <https://vvn.nl/van8naar1>



Bikeability Scotland



Bikeability Scotland aims to give children between the ages of 8-13 the skills and confidence to cycle on the road in a safe manner. The course is designed for children who can already ride a bicycle.

Generally, the training is delivered in schools but not all schools offer Bikeability training as it is not a mandatory part of the school curriculum. The delivery of the course is at the discretion of teachers/ parents who set up the scheme with support from Cycling Scotland and their local authority, then it is scheduled into the school year. 2011 statistics show that 69.5% of Scottish primary schools are taking part, but only 31.5% give on road training.

The programme covers three different levels. Level 1 teaches children how to check if their bike is safe, how to use brakes and gears, and control of the bike. This level is done away from traffic, usually in a playground. Level 2 is considered the main part of the Bikeability training programme, around 42% of primary schools in participating local authorities deliver this level. It intends to give children the skills to cycle on the road. Level 2 can be delivered off road, but this is not in line with the desired

standard. Level 3 teaches children how to cycle on busier roads and how to plan routes. Level 3 is not frequently delivered in Scotland.

Bikeability Scotland is delivered by trained cycling instructors who are often teachers, non-teaching staff or volunteers. Volunteers are essential for the smooth running of Bikeability. Those who wish to be involved must be trained to do so. A Cycle training assistant course can be taken for free and an advanced cycle trainer course costs £300, although this is free for existing Bikeability Scotland volunteers. Teachers and parents are encouraged to take a course in order to support Bikeability Scotland. A parent's guide is available to inform parents about how they can support their child throughout the course and get involved in teaching Bikeability Scotland. Pupils do not pass or fail the course. Each child receives a certificate and badge once a level is completed and is given advice about what they need to work on.

Cycling Scotland aims to get more people cycling more often – Bikeability Scotland is part of this strategy. However, research does not suggest it leads to more children opting to cycle to school.

KEY FACTS

WHERE?



Playground and the roads

WHAT SKILLS?



Cycling skills and safe road cycling, Theoretical skills

AGE GROUP?



WHO DELIVERS?



Teachers, volunteers, parents

HOW LONG?



2011 - present

REACH?



69.5% of Scottish schools



Source: Cycle Scotland. Bikeability



Source: British cycling

- + Comprehensive framework to teach cycling
- + Three levels reach a range of ages
- Not every school participates
- Only a minority of schools do on road training
- Not every child takes part
- Not in the curriculum, reliant on volunteers and supportive schools
- Misses those who can't cycle and don't have access to bicycles
- Level 3 training is rarely delivered



Cornerstones: Biking in the Park



The Cornerstones programme aims to make connections between the classroom and the real world for students in Washington D.C. schools. 'Biking in the Park' was selected as part of the Cornerstones programme because it involves physical activity, road safety and independent mobility. The scheme is delivered in 78 elementary schools every school year.

The specific aim of 'Biking in the Park' is for every child to learn how to ride a bike and cycle to the park. The course finishes after 6 weeks with an organised ride to a nearby greenspace, generally around a 5-7-mile roundtrip. The final ride can be linked to another school activity. For example, one class has a 'no-waste' picnic, others involve the local police force. Each lesson teaches a different topic and the majority of children are able to go on the final ride in week 6 of the course. The topics include: balancing and pedalling; riding and on-road safety; equipment and safety checks; fitting helmets; using hand signals; and identifying road signs. All able-bodied children in 2nd grade can participate in the course because 950 bikes were purchased to start the programme, along with helmets and storage equipment.

P.E. teachers are taught how to carry out the cycle training and they are solely responsible for the 5 lessons in school. All P.E. teachers had to be trained before the scheme was launched. Volunteers from Washington D.C.'s bicycle lobby assist with the final ride. Parents are also asked to volunteer to chaperone the final ride. In September 2018 the programme had enough people within schools and the bike lobby to turn away volunteers, highlighting the courses stability.

The programme conducts its own assessment of the change in children's abilities before and after the cycle training course. This is done using a basic score of 1-4. The children also carry out a self-assessment and no child can fail the course, even if they do not go on the final excursion. The programme emphasises fun and experiences, learning to be a 'cyclist' is not the aim. The programme's effect on long term cycling behaviours is not monitored.

Cornerstones funding gave the programme £196,588 (\$250,000) to start up, on the premise it would begin to sustain itself with other funding in the future. An estimated £133,000 (\$170,000) was spent to set up the scheme and it has a yearly spend of roughly £23,000 (\$30,000) for bike maintenance and transport costs. Cornerstones was initially set up by a group of private philanthropic funders.

KEY FACTS

WHERE?



Playground and the roads

WHAT SKILLS?



Practical skills, Theoretical skills, Non-cycling skills

AGE GROUP?



7-8

WHO DELIVERS?



PE Teacher (receives training first)
Volunteers

HOW LONG?



2015- present

REACH?



All 2nd Grade - 3500-4000 children per year, 78 schools



Source: Washington Post

- + Part of P.E. teachers' role
- + On-road experience of making a journey to a selected destination
- + Bicycles are provided by the organisation, access to equipment not a barrier
- + Opportunity for other learning experiences
- + Not solely part of a cycle training programme but a broader Cornerstones initiative
- + Volunteers on the final ride have clearly defined roles
- Not about changing transport behaviour
- Some children will not get a chance to cycle on the road
- Not accommodating for disabled children



Mobile Traffic Park



'Mobiele Verkeerspark'

The 'Mobiele Verkeerspark' (Mobile traffic park) is a small portable trailer that contains miniature road signs, traffic lights, road markings and traffic cones. This lets you bring the streets to a safe protected environment, such as a school playground.

In the region of Flanders, schools and youth organisations can request to use the traffic park for a fee, of around £20, which is covered by their province. The traffic park is owned by the province of Vlaams-Brabant. The 'Mobiel Verkeerspark' can be setup in any suitable protected location of 30m², either in or outdoors. For example, a gym hall, a park or (closed off) street.

With the tools provided a variety of different routes can be constructed to mimic real streets. Once set up, children can cycle the designated route and respond to signs, traffic

lights and road markings as they should on a real road. The programme offers no specialist trainers or guidance about who should teach children using the traffic park. How the materials are used is up to the organisation who leases the traffic park. The supervision of an adult, teachers and/or parents, with knowledge of traffic rules is deemed sufficient.

Children using the traffic park 'learn by doing' in a fun, safe and interactive way. It allows children to prepare before participating in real traffic situations and can effectively bridge the gap between on and off-road cycle training. All children who participate feature as road users whom are to be recognised by other participants. This means that the 'Mobiel Verkeerspark' enables children to experience simulated real-life traffic situations, with other 'road' users.

WHERE?



Indoors or outdoors, in a protected area

WHAT SKILLS?



Practical skills, Theoretical skills

KEY FACTS

AGE GROUP?



WHO DELIVERS?



Not specified or fixed – anyone can request to use it

HOW LONG?



2008 - present



Source: www.mobielvlaanderen.be

- + Focuses on 'playfulness' and 'learning by doing'
- + Very flexible set up in terms of location and delivery
- + Road skills in a safe environment
- Is not linked to a broader traffic education approach
- Not supported with a teacher or clear training materials
- Does not include a method to measure the progress of children using it



Teacher on the Bicycle



'Meester op de fiets'

In Flanders, primary schools have the responsibility to provide traffic and mobility education to their pupils. To support schools with this task the 'Meester op de Fiets' scheme offers a 'cycling teacher' who organises a practical cycling course. The aim of the scheme is to teach pupils, in a safe and fun manner, how to cycle on the road. It starts with theoretical lessons in the classroom. Afterwards, pupils start practising basic cycle skills in the school playground. At the end of the programme the children put everything into practice and cycle with other traffic on the road. Once the course is over, pupils are expected to understand traffic rules, have gained cycling skills and be able to act appropriately while on the road.

The course is not mandatory but it can be used by schools to support the educational curriculums traffic safety requirements. Schools must pay £53 (€60) a day for the 'cycling teacher' to come to their school and it is up to the school how many days they wish to do the training over, typically it is one day. All theoretical materials used can be accessed online for free. Over the years the 'cycling

teacher' has proved very popular. To deliver the scheme on a large scale, numerous parties cooperate: MOEV, VIAS, Mobiel21 and the Flemish Ministry of Education. MOEV is the Flemish organisation for movement (physical activity) in schools. VIAS is the independent and multidisciplinary Belgian knowledge centre for improving road safety, along with mobility and safety in general. Mobiel21 is a non-profit organisation that activates people, groups, organisations, companies and policies to deal with mobility in a conscious way.

The starter-job-programme from the Ministry of Education aims to create opportunities for those aged 26 and under with low educational levels, helping people get their first job. Today, 80 adolescents work in this programme as a traffic-safety-starter and 10 of these are 'cycling teachers': 2 per province. The adolescents get a one-year contract with MOEV, which can be extended by a year when he/she is willing to follow an education. Each employee has a coach who supports them in their role.

KEY FACTS

WHERE?



Classroom, playground, the roads around the school

WHAT SKILLS?



Theoretical skills, Practical skills

AGE GROUP?



WHO DELIVERS?



Cycling teacher

HOW LONG?



Optional, usually 1 day

REACH?



Over 300,000 pupils in 3,500 schools as of 2013



- + Fun and play are important parts of the programmes content
- + Teaching practical cycling skills in a protected area and on the road
- + Helps young adults gain access to employment
- + Involvement of multiple strong parties on the Flemish level
- Pupils need to provide their own bikes
- Schools depend on an external organisation

Source: hbvl.be



Road Wise VR-training



'WegWijs VR'

WegWijs VR-training utilises new technology to teach Dutch school children traffic safety. VR glasses simulate traffic situations to show children how they should behave in different scenarios. Virtual reality (VR) is defined as a three dimensional and interactive environment and it is becoming increasingly popular for educational purposes. The idea is that, VR will actively engage students and allow them to learn by playing.

The scheme is being trialled in primary schools around the Netherlands. The researchers who set up the pilot administer the program over six weeks in 20-minute sessions. They teach children how to deal with traffic situations by using a variety of simulated environments. The simulations can be tailored to match the area around the child's school to make the teaching applicable and practical. Each child uses a remote control to interact with the virtual environment and respond to the road and traffic around them. Within the simulation, children will

experience crossing a street, priority rules and how to obey traffic signs.

Evaluation found that 80% of the children enjoyed the training and considered it a fun activity. The traffic skills of children increase on average by around 33% after participating in the training for 20 minutes a week, for six weeks in total. However, the evaluation is conducted in the virtual reality environment, not actual traffic situations.

The scheme is funded by an insurance company who aims to decrease traffic casualties involving children by 25%, from 2015 – 2020. Therefore, the scheme focusses in particular on traffic education for children who attend primary school. The development of the scheme is coordinated in collaboration with a non-profit organization which focuses on safe traffic in the Netherlands. Schools can request the scheme for free. Furthermore, a corresponding App can be downloaded for free to assist the learning outside of school.

KEY FACTS

WHERE?



Classroom,
the roads

WHAT SKILLS?



Theoretical
skills,
practical
skills

AGE GROUP?



WHO DELIVERS?



Trainers,
researchers

HOW LONG?



Pilot
2016 – 2018

REACH?



Over 1000
children of 14
different primary
schools.



- + 1 to 1 pupil training with on the spot feedback
- + 20-minute sessions are quick and easy to fit into the school day
- + Inclusion of game elements make the training attractive and enjoyable for children
- + Not limited to one mode of transport, broader focus on road safety
- + Simulation can educate people about risky situations in a safe way
- Using VR-glasses can result in participants feeling nauseous
- Real-life practical traffic safety exercises are not included
- Requires technical knowledge to create, potentially expensive



Traffic Safety Exam



'Praktish Verkeersexamen'

The 'Traffic Safety Exam' gives schools a way of delivering practical and theoretical traffic education. It is a non-compulsory exam aimed at children of 10-12 years old, consisting of a theoretical and a practical component. The theoretical component is offered nationally and each year it takes place on a dedicated date in April. The practical component is organised at school level or at the municipal level. The yearly event is used by national and local organisations (such as VVN and Fietzersbond) as a way to raise awareness of the importance of traffic safety around the school, for school staff, parents and the municipality. Parents are encouraged to actively teach their children about traffic behaviour.

The theoretical exam is organised by VVN, the national traffic safety NGO, and tests basic traffic knowledge: rules of the road, traffic behaviour, traffic signs and traffic concepts. The exam consists of 25 photos of traffic situations and the pupils need to decide which road user has the right of way. 94% of all primary schools participate in the exam and 98% of children pass the test. The children gain the basic traffic knowledge through traffic education in school, from their parents and from on-line

quizzes and exercises. In some schools this education starts as early as 4 years of age.

The practical exam focuses on cycling and it is the final exercise that completes children's traffic education in primary school. It tests how children apply the theory and skills along a predetermined route. The 30-minute route includes challenging elements so that cycling skills are tested in real life situations. On the day of the exam, parents who volunteer stand at check-points along the route and assess if children exhibit the right behaviour. Each 'check-point' is positioned to assess a different skill. The exam is organised by the school itself, or by the municipality, in cooperation with parents, volunteers or guest teachers and sometimes the police. The route is provided to teachers and parents several weeks before the exam to help students prepare. Children must be competent cyclists to participate in the exam. 88% of schools participate in the exam and 97% of participating children pass the exam. The reason that children do not participate is that they cannot cycle or have too little cycling experience. In the years prior to the exam, 57% of schools include practical cycling lessons in their curriculum.

KEY FACTS

WHERE?



Classroom, the roads around the school

WHAT SKILLS?



Theoretical skills, Practical skills

AGE GROUP?



WHO DELIVERS?



Coordinator of the scheme in collaboration with teachers and parents

HOW LONG?



The exam takes 30 minutes.

REACH?



94% schools do the theoretical exam. 88% schools do the practical exam



- + Focusses on 'being a road user'
- + Combines theory and practical components
- + Parents are involved by checking the children along the route
- + 'Rite of passage'
- + Conducted in almost every school
- Difficulties with the inclusion of children who have very few cycling experience





3. LEARNING FROM INTERNATIONAL PRACTICE - WORKSHOP

On November 7th, Angela van der Kloof and Oliver Blake conducted a three-hour workshop in Glasgow. The session intended to contribute to the production of this report by adding local knowledge. Stakeholders from throughout Scotland attended, and each brought a different perspective on cycle training in Scotland. A list of all 15 attendees can be found below.

Name of attendee	Organisation
Elinor Steel	North Lanarkshire Council
Alan Smith	Scottish Advisory Panel of Outdoor Education and East Dunbartonshire Council
Josh Wood	Cycling UK and Cycling Scotland QAA
Ileene Mullholland	Canny Cycling Tutor
Andrew Abbess	Stirling Cycling Training Tutor
Mel Coutts	City of Edinburgh Council – Sports and Physical Activity
Clara Walker	Forth Environment Link
Craig McCulloch	Scottish Cycling
Suzanne Forup	Cycling UK
Christopher Johnson	Cycling Scotland
David Collins	Cycling Scotland
Greg Brown	Cycling Scotland QAA
Audrey Whitelaw	Glasgow City Council – Road Safety
Collett Carrol	Glasgow City Council – Road Safety
Stuart Logan	Transport Scotland

The workshop was delivered mid-way through the project to ensure it contributed to the production of the final report. The thoughts and opinions of local stakeholders and experts who participated in the workshop helped tailor existing knowledge, based in the Netherlands, to a situation which differs culturally, politically and geographically. The intent was to ensure this documents applicability for the Scottish context. This approach is derived from collaborative research methodologies in which the participants play an active role in shaping the research. Therefore, the contents of this report include input from the participants, their contribution warrants thanks and acknowledgment.

During the workshop, the five international cycle training courses were presented to the group through worksheets and oral presentation. In the first activity, participants were encouraged to ask questions about the cases presented above and think about what more information they would need for the cases to be applicable to Scotland. All the questions were recorded via A3 sheets of paper, and each was addressed and incorporated during the final stages of creating this document. The second activity was intended to make the participants think about the benefits of each case, address how it's features may be able to tackle some of the obstacles Bikeability Scotland encounters and consider how it could be implemented in the Scottish context. All the information was recorded using A3 sheets given to the participants and used during the exercises, note taking and post-it notes. Upon returning from Glasgow, the notes made by the participants were transcribed and the questions and comments were addressed then incorporated into the final report.



3.1 Workshop comments

The following comments are taken from participants in the workshop who were asked: “What would you like cycle training to achieve in the future?” After the workshop they were thematically organised and grouped under the following headings.

Culture Change/ image of cycling

- More social confidence building – move the narrative on to a cultural change
- Change the culture towards bikes and active travel
- More children cycling to school
- Reduce stigma of cycling amongst secondary school pupils and adults
- Embedded practice from nursery school
- Make cycling meaningful to people who have not yet given it meaning
- To change the perception of cycling to be a normal and everyday occurrence

Reach and delivery of cycle training

- Have all schools, primary and secondary, involved
- Everybody in Scotland to achieve a level 3 of national standards in cycle training
- Access to Bikeability training to all children in Scotland
- Full input to all schools/ Level 3 to be taken on by primary schools
- Bikeability delivered to all school children
- Develop sustainable model for Bikeability that allows schools to automatically enrol year on year

Infrastructure and equipment

- Signposting infrastructure through training, rides and skills
- Increased accessibility to equipment, events and resources
- Better cycling infrastructure

Community/ Family/ other groups

- More focus and opportunities for community groups to deliver
- Family cycling initiatives – joined up parent and child cycling programme
- Involve families from a younger age
- Realise the ambition that all parents should have an expectation that their child will receive on-road cycle training at school
- Increase the number of school pupils who cycle to school through improved parent and child confidence
- Demand from schools to (unreadable) resources because so many children and parents feel safe to start cycling to school
- Recognisable cycle training for other groups e.g. employees, over 65's
- Encourage children and family to cycle more regularly



Specific cycle training/ Bikeability comments

- More emphasis on the benefits of cycle training e.g. health, climate change, social, economic
- More consistency of the standard of Bikeability sessions
- Change the name of on-road training to something less scary
- Continue to support local authorities in enabling schools to deliver Bikeability
- Improve the consistency of the quality of school cycle training
- Greater range of courses training from play on pedals – adult training, without gaps
- Develop a structure that doesn't disadvantage schools that can't provide volunteers (these schools are the most disadvantaged and need more support)

General/ other

- Increase access to opportunity
- Understand the difference Bikeability makes (ideally use statistics)
- Sharing of ideas/ approaches to deliver support
- People driving motor vehicles to understand Bikeability principles of: primary/ secondary. Only when cycle infrastructure and convenient





4. RECOMMENDATIONS

In this section, recommendations derived from each of the five cycle training programmes outside of Scotland shall be provided. The recommendations will be aimed at Bikeability Scotland, cycle training in Scotland and occasionally for Scotland in general. Their intention is to contribute to Cycling Scotland's broader aim of getting more people cycling more often.

The recommendations include ideas that can be implemented in the short, mid and long term. Not every recommendation is suitable for Scotland currently. For example: when taking inspiration from the Dutch cases, it is suggested that cycle education is grouped with a wider traffic safety programme. Currently, there is a danger that this strategy would mean cycling gets pushed to the margins of the programme or is delivered merely as an afterthought. However in the long term, if cycling becomes more popular, this approach would not carry this risk to the same degree.

As outlined above, the following recommendations may be applied to existing training programmes or implemented as future schemes and are workable across different timeframes. However, it is beyond the scope of this report to assert which of the recommendations are for what aspect of Scottish cycle training, or the timeframe which is realistic to implement them. The feasibility of each recommendation will be best assessed by those with knowledge of local political systems, funding arrangements, school structures and Scottish society. The broad approach intends to open a dialogue and inspire thinking within Cycling Scotland about possible ways cycle training, particularly for children, can contribute to a wider uptake in cycling across Scotland.

The variety in cycle training programmes presented reflects the different cycle cultures from which they are delivered in. Any discussion within Scotland about the future of cycle education must bare this in mind and address the vehicular cycling approach that is present within cycle training. If Scottish ambitions of creating more cycling infrastructure are realised, the style of cycling required will change, and furthermore, the training must also change. This issue cannot be fully explored here and would be best discussed internally with existing cycle trainers.

1. Cornerstones – Biking in the Park
 - Train P.E. teachers to deliver Bikeability Scotland. A similar approach to Cornerstones would allow cycle training to become more entrenched in a school's fabric.
 - Provide bikes for the students to increase the access of the scheme and remove barriers in areas facing socio-economic deprivation.
 - Include making an actual trip in cycle training. Using this idea in the Bikeability Scotland programme would help children and parents view the bicycle as a way to get to and from given destinations. Cornerstones uses this approach to incorporate other teaching objectives at the chosen destination.
 - Recruit parents to volunteer to chaperone the final ride and to be involved in the activities at the destination.

Despite being from a setting with low levels of cycling, there are important lessons to be learned from this example of cycle training.



First of all, the programme comes from a broader 'Cornerstones' initiative. Instead of being focused specifically on cycle education, it is part of a wider group of learning outcomes that aim to teach children real life skills. As it is embedded within a bigger agenda it may be easier to gather support for a programme that encompasses theatre, maths, science, dance, citizenship, instead of a programme that simply focuses on cycling.⁴⁶ This could be particularly important within a country where cycling is a marginal activity and is not valued in the mainstream. Within Scotland it appears the Curriculum for Excellence could be used as a way to include cycling under a broader umbrella of activities, as Play on Pedals has begun to do.

Due to the programmes organisational make up, the Cornerstones initiative has become part of the school curriculum. This affords the scheme a level of protection, whereas schools in Scotland may experience difficulties fitting cycle training into the school day, schools in Washington D.C. will not encounter this problem. In addition, the Biking in the Park lessons have become part of a P.E. teachers work. All P.E. teachers were trained in how to teach cycling, further embedding the course within the school. A clear benefit of this is that it avoids future issues with availability of volunteers who are qualified to teach cycling. Furthermore, it helps normalise cycling for the students. Instead of it remaining something that requires a specialist to come to the school and teach, it is delivered by a teacher they are already familiar with. For a low rate cycle country such as Scotland it is important to have individuals who can champion cycling and are passionate and not every P.E. teacher may fit this profile, but the benefits outstrip the costs.

This programme does also need some volunteers, but when they are needed their roles are clearly defined: help supervise the final ride to a nearby greenspace. A distinct role for volunteers may encourage people to volunteer. Also, the volunteers are only needed once in the programme which makes it less of a commitment as oppose to weekly sessions. In addition, parents were asked to be a part of the final activity in a supervision-based role. This presents a good opportunity to include parents in cycle training in a way that does not require extensive training

The 6th lesson, in which children cycle to a nearby greenspace, gives the children experience of cycling on the road. Instead of this being merely to test abilities and expose students to the road environment it is done with a clear destination in mind. A trip of this kind creates opportunities for route planning. Furthermore, making a real trip will help to normalise cycling as a viable mode of transport for everyday use. The course gives teachers freedom to adjust the route of this ride to suit their needs and other types of learning can be built into this final trip.

The Scottish curriculum for excellence makes it clear that health and wellbeing are important aspects of a children's education. Outdoor learning is also featured in the curriculum. A programme of this nature presents a clear chance to meet many of the desired outcomes within the curriculum for excellence.

It appears that this course does not act as a replacement to Bikeability Scotland. Bikeability Scotland could be improved if it was incorporated into the curriculum allowing it to reach all children in Scotland. Including teachers more closely in this would certainly be a step in the right direction. The skills taught are similar to Bikeability Scotland level 1 but not as advanced as level 2. With the inclusion of the trip to the park it incorporates other learning objectives and shows children that the bicycle is a transportation mode.

⁴⁶https://dcps.dc.gov/sites/default/files/dc/sites/dcps/publication/attachments/English_Cornerstones_Flyer_2016-17.pdf



2. Mobile Traffic Park

- Available tools to assist Bikeability Scotland trainers with their teaching, such as a mobile traffic park, can help diversify sessions and the fun of cycle training.
- A simulated road environment could help bridge the gap between off and on road training within Bikeability Scotland. However, this should not be used as a substitute for on road training.
- Use a pop-up traffic park to give parents who would not ride a bicycle normally the chance to get positive cycling experiences with their children.

Of the schools 42% of Scottish primary schools which deliver Bikeability Scotland level 2, it is not guaranteed on road training will feature.⁴⁷ The simulated environment that the Mobile Traffic park creates could act as an effective bridge to on road training. In a similar way, many of Scotland's rural areas may struggle to find suitable roads to complete some of the required manoeuvres within Bikeability Scotland. A tool of this nature would be beneficial for these areas when delivering cycle training. However, this cannot be used as a way to side-step training on the road but a tool that can help if necessary.

The simulation of a real-life environment in safe space allows younger children, who may not be ready or allowed to cycle on the road, the chance to learn cycle skills that are more applicable to real situations. By creating a course that resembles a road, it also encourages users to respond and react to other 'traffic.'

As a way to involve parents in children's cycle education a simulated road situation could be helpful. Parent's themselves who do not have the confidence or experience to cycle on the road could benefit from accompanying their children in a simulated road situation.

This model should be viewed as a tool that can support cycle training and make training more applicable to the road environment. An entire training programme should not be based around this, but the availability of this tool will help diversify teaching and assist trainers. In addition, a mobile traffic park could be used as a pop-up-event by schools or other organisations in Scotland to increase the presence of cycling and road safety activities in a child's experiences. All activities that are delivered with a tool like this should be done in the presence of an adult who is aware of the rules of the road and can teach those using it accordingly, preferably a trained instructor.

3. Teacher on the Bicycle

- Explore other volunteer models to increase the numbers of cycle trainers and the stability of Bikeability Scotland programmes. Teacher on the Bicycle gives young people employment opportunities through cycle training. Alternatively, move to a system which pays cycle trainers, making the position more attractive and viable.

A feature of Teacher on the Bicycle that could be useful is its linear nature which takes children from the classroom, where rules of the road are taught, to the playground for skills training and finally to the road to apply the knowledge. The compact nature gives students a rounded experience of cycling in a one-day period. It must be ensured that a 'crash-course' style cycle training must be delivered at a very high standard to ensure children get sufficient knowledge in just one day.

⁴⁷ Wyllie:Lodge Road Safety Consultants. 2018. *Pedalling Bikeability Scotland: An evaluation of how Bikeability Scotland is delivered within Local authorities*



What is particularly interesting about this case is the partnership the course makes with the Belgian Ministry of Education. This partnership creates employment opportunities for low skilled adolescents and supports their entry into the labour market. This structure has three positive effects: (a) it ensures someone is always available to teach the course; (b) the Ministry of Education is involved with, and supports, cycle education in school; and (c) young people gain work experience and paid employment. Such a model helps to address unemployment and a programmes reliance on volunteers. The only risk with this strategy is that the role of a 'cycle trainer' is undervalued and seen as a stepping stone to other forms of employment. However, making cycle training a paid job gives it a status and value that may not exist with an unpaid role.

4. Road-Wise VR training

- Include cycling into a broader traffic safety agenda which teaches children about pedestrian, cyclist and passenger behaviour. This can create a broader range of support for cycle training amongst school staff and beyond. Explore ways to incorporate new transport trends into this e.g. scooters and hoverboards.
- Create new and innovative ways to teach children about cycling safety. Utilise gamification to increase the fun and excitement, whilst still meeting serious learning objectives. Online quizzes, apps, VR trainings can diversity Bikeability Scotland, give trainers more tools to work with, and extend learning beyond the classroom.
- Explore VR training, or similar options, that allow trainings to be delivered on a 1-1 basis in short sessions.

Using Virtual Reality technology as an educational technique is a relatively new development and it holds much potential, especially in a cycle training setting as was demonstrated in the Dutch example. New and novel techniques, such as this, can be deployed to incorporate fun into cycle training. Despite these opportunities, simulated environments should not be used as a substitute for outdoor, real world experiences.

As the software would need to be developed for a Scottish version of VR training, there is the opportunity for it to be designed in a way that is most applicable for cycle training in the Scottish context. In addition, the software would also have to reflect the vehicular cycling environment in Scotland and new developments in cycling infrastructure. The simulation could either focus solely on cycle training, or on a broader road safety agenda. If developed only for cycle training this could help to teach the rules of the road and test children's awareness of rules while cycling. If it sets out to teach a broader set of road safety lessons it could feature pedestrian, cyclist and passenger behaviours, and create a broader support for the programme, beyond cycling advocates.

The programme can replicate real life situations which could make it an effective bridge between off-road training and on-road training. Level 3 Bikeability Scotland training is rarely delivered in schools but this type of training could teach children how to negotiate complex junctions and roundabouts of the sort covered by level 3 training. A simulated environment removes the risk that people may associate with taking children on more advanced rides.

The training is supported by an App which is free to download to smartphones. A feature like this allows learning to take place beyond the school day in a way that can be gamified to encourage children to participate. There is also opportunity for this to be used as a homework tool or for parents to support children outside of school.



Once such a scheme is developed it can be replicated and delivered in locations outside of schools, museums for example. The intention would be to include learning about cycling in locations outside schools.

Finally, the scheme in the Netherlands involves a Dutch insurance company supporting traffic safety. This shows how the private sector can help foster a positive image of cycling, helping to educate children about safety on the roads. While this may not be directly applicable to Scotland it could be used as inspiration as to ways the private sector may be utilised to help promote cycle education.

5. Traffic safety Exam

- Create a Traffic Safety online test that can be aimed at children to test their theoretical knowledge of being outdoors, in and around traffic. Question can be based around pedestrian and cycling behaviours. As a non-compulsory activity it can support cycle training.
- Include a 'rite of passage' style activity within Bikeability Scotland in order to give children confidence to cycle on the roads independently. Such a feature should be celebratory and not another exam to add stress to the children's lives and make cycling an activity that could cause worry and concern.
- Create a national day in the school calendar that promotes traffic safety and road awareness, include cycling in this.

The name of this training can open an interesting conversation within the Scottish context. 'Traffic Safety' encompasses a broader range of situations and skills than only cycle training. With this there should be a wider support for this type of teaching. Furthermore, if new road safety activities are created, there will be new opportunities to teach cycle safety too. On the other hand, if current cycle training is expanded to encompass a road safety perspective it will need to be done carefully so that cycle training time is not reduced.

The exam features two components: a theoretical test and a practical test. From each aspect different things can be learned. Firstly, the theoretical component is an element that can be closely adapted to suit Scottish schools. Teaching children these skills early on will help them in later life as pedestrians and potential drivers. The test could be an online function to support Bikeability Scotland cycle trainers or it could feature as another part of the curriculum. Like the traffic safety exam in the Netherlands, images and pictures should be utilised to make the exam visually attractive for children as opposed to using masses of text. An exam of this nature would appeal to parents and children, who may not naturally consider cycling, if it also included questions about being a pedestrian and general road awareness. A free online test, as suggested above, could later form the basis of a compulsory theoretical traffic exam delivered in schools.

The practical exam acts as a 'rite of passage' for children in the Netherlands, confirming to students that they are competent and ready to cycle independently. While it may not be realistic to 'copy and paste' this model, the idea of a rite of passage could be useful for Bikeability Scotland. If Level 2 training ends with an activity that gives children confidence and confirmation that they can cycle it may encourage cycling beyond the programme. Alternatively, a practical cycling or traffic skills activity could be built into the transition between primary and secondary education as something separate to Bikeability Scotland. This could be done in a similar way to the Van 8 Naar 1 (mentioned in the country background) programme which operates in the Netherlands.

It must be noted that caution should be exercised if anything resembling, or branded as, a cycling exam is to become part of school-based cycle training. A pass or fail activity could play into the hands of anti-cycling groups who advocate for a cycling exam similar to driving tests and that cyclists should be insured. The activity should be based around empowering children and giving them the green light to cycle by themselves.





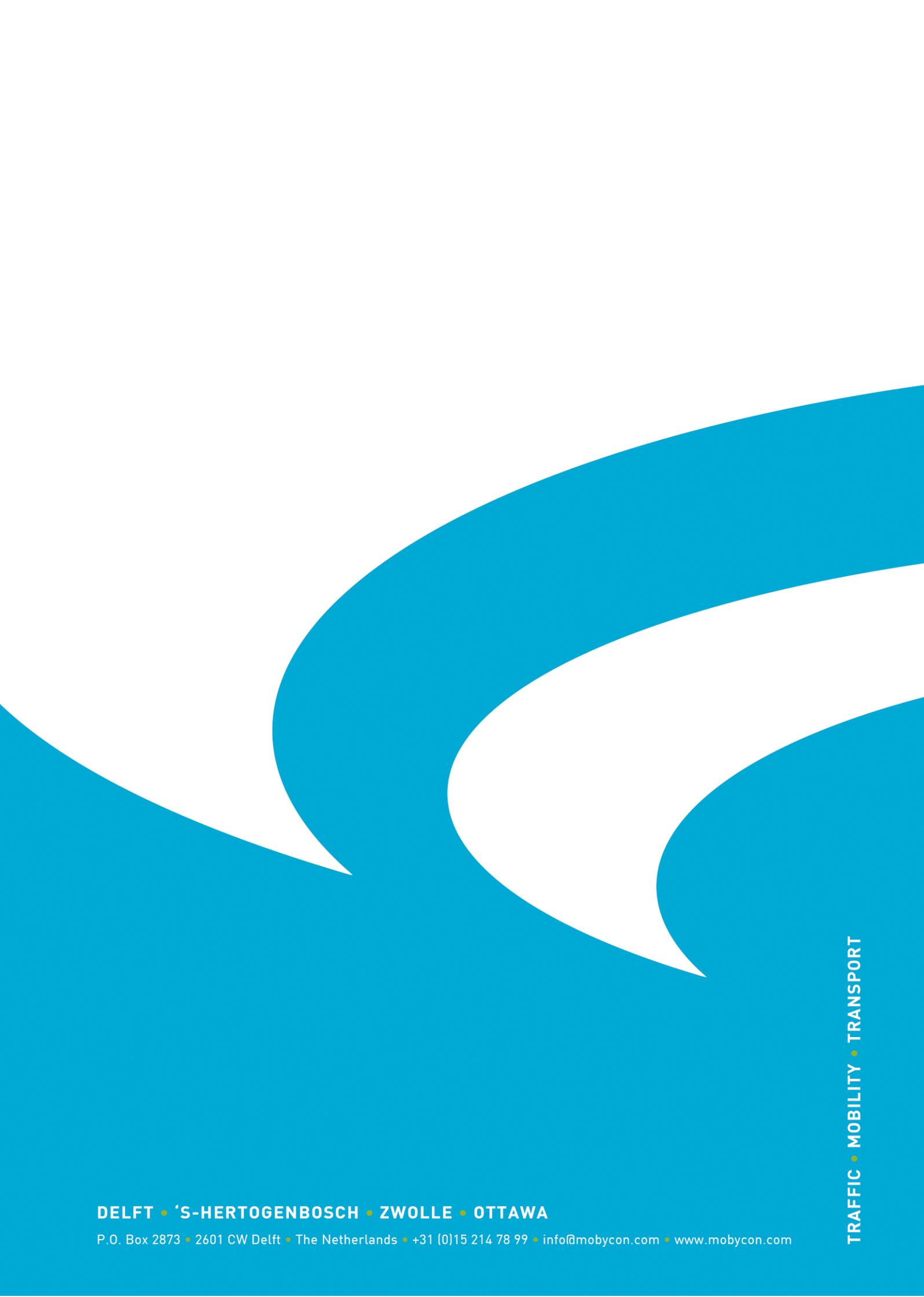
A feature of the Traffic Safety Exam that could have a particular relevance is the way it is organised on a certain day every year and is made a national event. Similar annual nationwide campaigns currently exist in Scotland, Walk to School week for example, but a day that focuses on traffic safety or acts as a nationwide rite of passage for children of a certain age could be adopted in the future.

6. Other

- Connect Bikeability Scotland with the Curriculum for Excellence to make sure all children in Scotland receive cycle training.
- Expand Play on Pedals to give young children positive and fun cycling experiences.
- Create a new training programme to bridge the gap between Play on Pedals and Bikeability Level 2 for children aged 6-8 years old.
- Include theoretical traffic safety teaching in school education for children aged 12-14. Teach children responsible ways to be a 'road user' and include cycling within this teaching.
- Explore ways to include parents and carers in cycling education. To foster long behaviour change, a child's environment outside of school is vitally important.
- Use schools as a means to normalise cycling as much as possible e.g. teachers giving trainings, not specialists. Cater for cyclists and make it a viable transport mode e.g. any school trip under 4 miles should have an option to cycle there with supervision.

The above recommendations, grouped under 'Other', arose during the production of this report while assessing cycle training for children in Scotland and other countries. Their aim and scope are admittedly ambitious; they intend to bridge gaps and create a situation in the Scottish education system that readies children not only to be competent cyclists, but independent, active and sustainable citizens, able to travel safely without barriers. Ultimately, aiding the creation of a rich, diverse and unique cycling culture in Scotland.





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