Home-school travel in a divided education system: at what cost?

1. The Purpose

The provision of free transport to school was a key component of the system of free, compulsory education for all, introduced in England and Wales in 1944 and three years later in Northern Ireland (NI). This helped attendance for those children living relatively far away. This paper will analyse distances travelled in home-school transport in NI, both that provided centrally and personal modes of travelling to and from school, as well as the potential social, economic and environmental impacts of the current level of school ‘choice’. It highlights that there are particular challenges in a divided system of education with schools fragmented by a selection process at age 11, by community affiliation and, sometimes, by gender.

While the current home-school transport policy in NI has remained largely unchanged for over 20 years, there have been enormous changes to the educational landscape, the needs of children and young people, the transport infrastructure across NI and the number of vehicles on the roads. It is not surprising that the provision of free home-school transport to eligible learners is currently under review. Additionally, as pupil numbers are tending to grow again in NI. If the existing policy on school transport were continued, the numbers of those eligible for free transport would increase by around 8% each year, adding an additional £7 million to central education costs annually. State-funded home-school transport already costs at least £81 million each year. Why is it so expensive, and are there structural changes that could address this?

2. Challenges of School Transport

While free school transport has its roots in the 1940s, changes to educational provision from the 1980s resulted in increased school ‘choice’ for parents and their children. This promised access to a wide range of schools and was designed to encourage a market in education. It was believed that applying market principles to public services, including in education, would increase competition and it was assumed that quality improvements would follow. While any benefits in such a system are hotly contested, and it has been blamed for increasing social segregation and educational inequalities, in the context of this paper school choice also has had a considerable impact on home-school transport. There is evidence of this impact across the globe where the marketisation of education has been deployed. It is said that “state-funded home-school transport is under considerable strain in England as it is in other countries with market-oriented schooling systems” with examples of challenges in Sweden, the USA and Australia cited. One impact of increasing competition is a shift away from neighbourhood schools, as parents and children exercise the choice of which school to attend, and this has led to an increase in the distances that children and young people travel to school. This adds to the demand for free home-school transport, with associated costs. For example, school transport in the USA accounts for a hefty 4.2% of all their educational spending.
Home-school trips also involve transport other than that provided by the education authorities and journeys to school using personal vehicles have increased. In the USA, there were 6.6 billion car journeys to and from school covering 30 billion miles in 2009. The cost was estimated to be at least $2 billion, with an additional time cost of $3 billion. Increased traffic volumes from these journeys have a knock-on effect on levels of pollution which, again to use the USA as an example, generated a cost estimated at $120 million each year for trips specifically to ferry children to and from school.

The use of active modes of travel to schools (ATS), such as walking or cycling, has decreased across the developed world, dropping from almost half of all home-school journeys to less than 13% over 40 years. This has contributed to a reduction in physical activity for many children and young people, increasing health concerns particularly in relation to obesity. As participation in physical activity has been associated with increased academic performance, reliance on cars or school buses and a reduction in ATS may also have a negative impact on the academic development of learners. Innovative solutions have been suggested in many countries, from changing urban structures in Chinese cities to encourage more ATS, bike sharing in Palermo and boosting already high levels of bike use in the Netherlands and Flanders.

3. Home-School Travel in Northern Ireland

Like many other places, car dependency has increased in NI. In fact, the average person in NI makes 81.5% of all journeys by car, much higher than that in the UK as a whole (63%) or in the Republic of Ireland (just over 50%). Some of this may be due to the rural nature of parts of NI, although in this respect it is little different from many other parts of the UK or much of the Republic of Ireland. Centralisation of employment may have exacerbated the issue in Belfast and car use has led to that city being listed as one of the most congested in Europe. It is forecast that congestion will cost the NI economy £800 million by 2025.

Increased car dependency is also reflected in home-school travel in NI as the proportion of home-school car journeys continues to increase. This is especially true for primary school pupils where the main mode of travel being ‘car’ increased from 59% in 2013/14 to 68% in 2019/20. Walking declined from 31% to 19% over the same period. In post-primary schools, the changes have been less dramatic over that period, but car use continues to creep up from 30% to 33% of all journeys; while walking has declined from 22% to 17%. It has been estimated that one in every five cars on NI’s roads during the morning peak is on a school run. Between 8.00am and 9.00am and around 3.00pm are also the peak times for road accident rates for children. One reason, specific to NI, which discourages active travel to school in some areas is thought to be sectarianism, with school uniforms a very visible marker of perceived community affiliation – sectarianism seems to be a particular problem for primary school-aged pupils. This may account for a high proportion of escort journeys (where the journey has no other purpose than to accompany another person such as in a home-school trip) in NI, as 16% of all journeys were escort journeys, a proportion which seems to be rising. The increase of non-active methods to travel to school may be one reason for almost 30% of children entering post-primary school in NI being classed as obese or overweight.

Free school travel is currently provided to the nearest suitable school to a child’s home, where the distance by foot is greater than two miles for children under 11 years of age, and three miles for older children. However, whether these distances are still appropriate continues to be disputed alongside the fact that home-school transport is not means tested. Some concern has been expressed that children from low-income families living just too close to the school to qualify for support for home-school transport are unable to afford bus fares, sometimes reportedly keeping their children at home as a result, while other parents of children provided with free home-school transport drive them to school by car.

The fragmented nature of education in NI is reflected in a very complex series of school types, often with overlapping catchments. Inevitably this increases the amount of home-school travel. As has been said, “...in Northern Ireland the picture of [home-school transport] is more complicated due to the larger number of school management arrangements and the sectarian divide which have placed additional demands on the system in terms of meeting the requirement of ‘nearest suitable school’”. It has been pointed out that the current eligibility criteria for home-school transport allows parents of post-primary children, who are living more than three miles away from a school of their choice, to choose free school transport to any school of their choice, no matter how far away. This encourages even longer distance home-school travel.

[9-10, 12-13, 15-16, 18-19, 21-22, 24-25]
A higher proportion of learners qualify for home-school travel funding in NI compared to other parts of the UK or Ireland. Overall, around 29% of pupils are eligible and around “11% of primary and nearly half (46%) of all post-primary pupils receive transport assistance.” In the Republic of Ireland, 18% of pupils received government funding for home-school transport, and in Scotland it is nearly 20%. NI also has the highest percentage of travel to school by bus (31%), compared to Scotland at 22% and, the lowest percentage, metropolitan districts of England at 12%. Even in London, only 29% of pupils use buses to travel to school, lower than across NI.

Various estimates have been made for the cost of home-school travel in NI. One source reported the cost as £57 million in 2002/03 rising to £65 million in 2007/08, which was 5% of the Education Budget that year. In 2014, it was ‘conservatively’ estimated that the recurrent cost of home-school transport in NI was £100 million, having risen at twice the rate of inflation over the previous 20 years and said to be consuming 4% of the Department of Education’s budget each year. The Department of Education state that they “...currently fund daily transport assistance to around 84,000 pupils at an annual cost of approximately £81 million per year”, but it is not clear what this or other costings include. For example, it is unclear whether this takes account of capital spending and vehicle upgrading and replacement.

There have been some attempts to estimate how much of the transport budget in NI is due to academic selection and how much is due to segregation by community affiliation. One estimate, in 2012, put the additional total cost of both at £16 million each year. Focusing just on post-primary schools, it was estimated that the removal of religious segregation would result in a “huge decrease in the numbers receiving fully subsidised home to school transport, generating substantial savings for the school transport budget.” The proportion of pupils in the Maintained sector eligible for free home-school travel, for instance, would fall from over 40% to just 1.8% and school mileage would decrease by 68%. Similarly, if academic selection were to be ended, total mileage would decrease by 54% and the proportion of pupils eligible for free home-school transport would fall by up to 49%. If NI’s education system were to move away from both academic selection and segregation by religion, total school mileage would fall by 74% and only 4.3% of pupils would require free home-school transport support. The combination of selection, religious segregation and the attempts to accommodate choice for many parents “...generates complex patterns of home to school journeys, an outcome which government has to accommodate in terms of providing school transport and funding for so called ‘eligible’ pupils.” These researchers estimate that selection and segregation add an additional $28 million (£20 million) to the education transport budget. It was estimated in 2014 that the current average distance travelled to school by NI pupils was 5.11 miles; if selection had not been a feature of the system, distance travelled to school would have been reduced to 3.03 miles. In a fully inclusive, non-selective system, where pupils attend the nearest post-primary school to their home, the average mileage travelled by each pupil would have been just 2.34 miles and nearly one third of all learners would live within a mile of their post-primary school.

While providing home-school transport for learners in NI incurs a taxpayer cost, there are also private costs for the parents of those learners who travel to school independently of the subsidised travel options provided by the Department of Education. Many pupils travel to school in family cars and this too incurs a range of outlays related to running and maintaining a vehicle, but also the less easily costed effects on society related to negative health impacts, increased congestion, pollution and wasted time.

4. Research and Analysis

The research in this Briefing Paper comprises a network analysis using a Geographic Information System (GIS). There are no publicly available data showing which households in NI have young people of school age, nor which schools they attend. However, data provided by the Education Authority identified the feeder primary schools for each post-primary school and the number of pupils who transferred to each post-primary for the 2019-20 academic year. While the home location of each pupil is not available to the researchers due to data access restrictions, it would seem reasonable to assume that each primary school would be located fairly centrally within its catchment, drawing its pupils equally from the surrounding area, and so the location of each primary school has been used here as a proxy for the individual homes of pupils transferring to post-primary schools in 2019. The analysis is based on 92.3% of the pupil transfers; the remaining records were excluded from the analysis for a variety of reasons, including pupils entering post-primary school from outside NI, excessive travel distances which would suggest the relocation of households around the time of transfer, home education and a small number of data quality issues.

Table 1 shows the average distance between primary schools and post-primaries under four scenarios. The first row shows that the average distance between a primary school and the nearest post-primary is 2.78 miles (equivalent average distances from Maintained and Controlled primaries to the nearest post-primary of any type are also shown in this row). Row 2 shows what travel distances would have been if schools were to continue to be separated by community affiliation, but without academic selection. In this scenario, the average distance between a primary school and the nearest post-primary of the same management type is 3.73 and 3.51 miles for Maintained and Controlled schools respectively. If academic selection continued but segregation by community affiliation were to cease (Row 3), average distances increase again, with, for example, that between Maintained primary schools and the nearest grammar school (of any management type) being 6.12 miles, compared to 3.39 miles to a non-grammar. While not shown in the table, combining the impacts of both selection and segregation by community inevitably means even greater average distances (at the most extreme, exceeding 7 miles for pupils from Maintained schools transferring to a Maintained grammar). Row 4 of the table shows the average distance between each primary school and the post-primaries to which pupils actually transfer (based on the Education Authority data for 2019-20). At 6.61 miles, it is over twice as far as that between each primary and the nearest post-primary.
Table 1: Average distances between feeder primary and post-primary schools (miles)

<table>
<thead>
<tr>
<th>Description</th>
<th>Catholic ethos</th>
<th>Protestant ethos</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Average distance between feeder primary and nearest post-primary school</td>
<td>3.12</td>
<td>2.59</td>
<td>2.78</td>
</tr>
<tr>
<td>of any type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Average distance between primary school and nearest post-primary school</td>
<td>3.73</td>
<td>3.51</td>
<td>3.62</td>
</tr>
<tr>
<td>disregarding selective / non-selective but retaining community division</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Average distance between primary school and nearest post-primary school</td>
<td>Grammar</td>
<td>Non-Grammar</td>
<td></td>
</tr>
<tr>
<td>disregarding community type but retaining selective/non-selective division</td>
<td>6.12</td>
<td>4.49</td>
<td>5.27</td>
</tr>
<tr>
<td>4. Average actual distance between feeder primary and post-primary school</td>
<td>6.75</td>
<td>6.48</td>
<td>6.61</td>
</tr>
<tr>
<td>attended</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is important to note that the average distances between primary and post-primary schools shown throughout Table 1 are likely to be a little higher than the average distances actually travelled by pupils; this is because rural primary schools will tend to have smaller classes, yet distances to the nearest post-primary will be longer. However, the data on these Year 8 pupils can be used to overcome this potential bias since it provides the numbers transferring to each post-primary and these can be combined with the distance data to estimate the cumulative impact of the additional travel for Year 8 pupils. From that figure it is possible to estimate the cumulative additional distances travelled by all post-primary pupils in NI. Table 2 shows that the total travel distance to and from school each day for the Year 8 pupils is nearly 192,000 miles, compared to a theoretical minimum of just under 86,000 miles if they attended the closest post-primary. On average, each Year 8 pupil in the data analysed travelled 4.85 miles more each day than if they had attended their nearest post-primary school.

Table 2: Total distances between feeder primary and post-primary schools based on 92.3% of Year 8 transfers 2020/21 (miles)

<table>
<thead>
<tr>
<th>Description</th>
<th>Actual Travel</th>
<th>Minimum Travel</th>
<th>Additional Travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total miles (single journey)</td>
<td>95,942(^{42})</td>
<td>42,861</td>
<td>53,081</td>
</tr>
<tr>
<td>Total miles (return journey)</td>
<td>191,884</td>
<td>85,722</td>
<td>106,162</td>
</tr>
</tbody>
</table>

Assuming that pupils attend school for 185 days per year, and applying the average travel distances to all post-primary pupils, the results suggest that total travel is in the region of 130 million miles more than would be necessary if pupils attended their closest post-primary (Table 3). This additional travel each year is accommodating school choice, academically selective schooling and community segregation. The figure is comparable to that calculated in 2014, in research which stated that all school travel in NI is “…equivalent to 270 million miles annually. If all post-primary pupils were attending their nearest school this would fall to … an estimated 126 million miles annually. In effect, supporting such an extensive choice of school is adding approximately 144 million miles a year in extra travel, and the vast majority of this is by bus or car, as longer journeys to school are less likely to be made on foot or by bike.”\(^{43}\)

Table 3: Additional travel required when attending schools other than the nearest post-primary school for all post-primary pupils (miles)

<table>
<thead>
<tr>
<th>Description</th>
<th>Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional mileage (per pupil per day both ways)</td>
<td>4.85</td>
</tr>
<tr>
<td>Additional mileage for whole school year (185 days, assuming some absences from a 190-day school year, per pupil)</td>
<td>897.25</td>
</tr>
<tr>
<td>Additional total mileage for all post-primary pupils (145,085 pupils in 2019/20)</td>
<td>130,177,516</td>
</tr>
</tbody>
</table>

\(^{40}\)For most cells in this table, these refer to Catholic Maintained schools except for the Grammar schools’ row, which refer to Voluntary Grammars with a Catholic ethos.

\(^{41}\)For most cells in this table, these refer to Controlled schools except for the Grammar schools’ row, which combine Controlled Grammars and Voluntary Grammars with a Protestant ethos.

\(^{42}\)This number is calculated from weighted values, taking into account the number of pupils transferring and the distance between their primary school and their post-primary school, unlike the figures in Table 1.

To calculate what impact this additional mileage would have is a little speculative, as there are many possibilities: for short journeys some pupils may choose to walk or cycle, some proportion of trips in vehicles may be undertaken in family or friendship groups, a proportion of trips will involve private cars while other trips may use school transport and so on. However, we know that 33% of journeys to school were by car in 2019/20. While car journeys may be over-represented in longer trips, it seems plausible to estimate the costs of the additional travel by car. In 2016, the RAC reported that a mid-range (1800cc) petrol vehicle would have a total running cost of £0.54 per mile. If 33% of the additional and unnecessary 130.18 million miles of travel were journeys by car, this would equate to a cost of over £23 million to the car owners per year, almost certainly an underestimate given that cars will be used even more frequently on longer journeys but balanced by the possibility of multiple occupancy of vehicles.

We can also estimate the additional carbon produced by this excess mileage. The same mid-range car is estimated to emit between 267 and 298 grammes of carbon dioxide per mile travelled. If 33% of these additional miles were using private cars with only one pupil being carried, these additional miles would generate between 11,470 and 12,802 tonnes of carbon dioxide each year.

Since 48% of post-primary pupils in NI travelled to school by bus in 2019-20, it is also possible to estimate the carbon dioxide produced by that excess travel. If we assume that pupils using buses travelled 48% of the total additional distance, this corresponds to 62.5 million passenger miles, emitting 8,960 tonnes of carbon dioxide each year. Taken together, the carbon dioxide output from the additional travel is more than 20,000 tonnes, and these figures are likely to be underestimates. While relatively minor compared to total national emissions, nonetheless this largely unnecessary travel contributes the equivalent of pollutants from an additional 10,000 cars on NI’s roads.

Air quality in NI has improved in recent years, partly as a result of improvements in transport as tighter vehicle emissions controls have been introduced, but there were still 170 tonnes of particulate matter emitted from exhausts and a further 500 tonnes of non-exhaust emissions in 2017. Vehicles also emit nitrogen oxides and these are particularly concentrated along main roads and in large towns and cities.

When travel patterns of routes from feeder primary schools to the post-primary schools are mapped, they illustrate the distances that pupils travel as they navigate the complex and overlapping catchments, often passing a range of post-primary schools to attend one which matches their community preference, or to reach an academically selective school, or merely exercising school choice. Map 1 shows the linkages between primary schools and the post-primary schools for those pupils who transferred to post-primary in 2019. The three colours represent the three main school types: Maintained, Controlled and Integrated and the result is a spaghetti jumble of movements across NI with many travel routes obscured below others.
Map 2, on the other hand, shows the patterns which would occur if pupils were to transfer to their nearest post-primary school, regardless of selection or community affiliation. In that scenario, the patterns of movement from primary schools around these post-primaries is much reduced, as a more logical set of catchments is established. It can be seen that almost all of these schools would be mixed with an intake from both Controlled and Maintained, and sometimes Integrated, primary schools.

In Maps 3 and 4, the focus is on Belfast schools. Map 3 shows connections between feeder primaries and the post-primary schools to which their pupils moved in 2019 and it indicates considerable movement and complexity of home-school travel. Map 4 shows the routes between the feeder primaries and their nearest post-primary school in each case. The differences in the two maps help to illustrate the amount of wasted travel to support a doubly divided system of post-primary education, and the marketisation of schools, designed to increase ‘choice’ for parents and pupils.

Routes have been slightly offset for each type of school to give a complete image of the movement which would otherwise be obscured.
5. Conclusions

Politicians recognise that the current education system in NI is not sustainable.51 The costs of a divided system of education are difficult to estimate. While one survey put it somewhere between £16.5 million and £95 million,52 even excess home-school transport costs are likely to be greater than the smaller figure. Some of these overall costs reflect duplication of the school estate, and some may reflect duplication of staff and support structures, but it is also clear that unnecessary travel has a cost. That cost is high in both financial and environmental terms and may even have an impact on child health through reduced opportunities for active travel to schools and increased roadside pollution. There is also the less measurable social cost of social segregation as a result of academic selection and community segregation in schools, paralleling a wider segregation in communities. Home-school transport continues to consume a significant proportion of the education budget, a situation that would seem set to continue and potentially increase.

A simpler school system where most learners move together from local primary schools to their local post-primary school would ensure that most of these costs are reduced considerably. The championing of local schools had been the case in educational flagship countries like Sweden until recently. A politically-driven policy to provide school ‘choice’ in Sweden is now having an impact on their educational provision as well, although not necessarily improving it.53

Of course, a move to local cross-community comprehensive post-primary schools is not a panacea. Some degree of choice would still be required to suit parental work patterns or afterschool childcare arrangements, for example. Additionally, the aim of increasing social mixing might be difficult to achieve in post-primary schools in culturally homogenous areas, and Map 2 shows a small number of post-primary schools which would have limited cross-community mixing, for example. It would take investment to ensure that each local school is equally well resourced and supported to ensure that, across NI, every school is a good school. Communities might welcome guidance in developing community solutions to help to move towards sustainable forms of localised educational provision. Whatever the challenges, as a move towards a fairer and more cohesive society, this policy direction would have considerable benefits. There are strong social, economic and environmental reasons for radical change to NI’s divided system of education, such as is proposed in the upcoming Independent Review of Education.

---

53 Andersson, E., Malmberg, B. and Östh, J. (2012)
Home-school travel in a divided education system: at what cost?