
UNDERSTANDING AND ADDRESSING DYSLEXIA IN TRAVEL INFORMATION PROVISION: EXECUTIVE SUMMARY

Introduction

This Executive Summary describes a PhD study funded by the Department for Transport as part of its 'Transport Direct' Programme¹. The broad aim of the PhD was to focus upon the understanding of user needs and reactions associated with traveller information services and, more specifically web-based travel information services such as Transport Direct.

Background to the Research

Dyslexia is one of the most prominent learning disabilities in the UK – estimated to severely affect 4-6 per cent of the population. This figure could even be as high as 10 per cent. The difficulties associated with dyslexia are specific to aspects of mastering and using written language. For that reason (and because of the other symptoms associated with the disability²), it is reasonable to assume that difficulties are extremely prominent for dyslexic people when faced with the task of undertaking a journey lifecycle³. In spite of that, examination of the cross-disciplinary literature highlighted a clear lack of recognition of dyslexia across the transport industry.

Ultimately, the aim of the research was to:

'Explore and understand the information needs and usability issues individuals with dyslexia encounter during a journey lifecycle; and translate those needs into recommendations for transport policymakers and service providers'

The following objectives were significant in enabling the above aim to be achieved:

1. To identify the macro and micro problems⁴ facing dyslexic people when accessing travel information during a journey lifecycle.

¹ 'Transport Direct' is an integrated web-based traveller information service, which presents the public with the opportunity to compare options for national multimodal travel across both public and private modes of transport.

² Difficulties can affect the learning process in one or more of reading, spelling, listening and writing. Accompanying weaknesses may be identified in areas of speed processing, short-term memory, sequencing and organisation, spoken language, motor skills, navigation and orientation.

³ We define a journey lifecycle as "the series of stages of information need and use that an individual encounters from deciding to plan a journey to arriving at its destination".

⁴ The term 'macro' relates to the higher-level fundamental information processing difficulties associated with dyslexia and travel information provision. The term 'micro' refers to specific aspects of travel information design that emerge as a result of the macro-level difficulties.

2. To determine whether these problems are a consequence of poor provision of dyslexia-friendly information, the fundamental traits of dyslexia, or both.
3. To consider whether the problems are specific to dyslexia or have a far wider application to non-dyslexics, though perhaps felt more frequently and severely by dyslexic people.
4. To consider what interventions should be implemented by transport policymakers and service providers in order to address the needs of dyslexic people and assist them through the journey lifecycle.
5. To capture and convey the emotional and informational setting within which dyslexic travellers find themselves.

Key Findings and Conclusions

At present there is a clear lack of recognition of dyslexia within the transport industry, particularly within travel information provision. There is a diverse range of disabled travellers in existence and a need to meet their travel information needs as far as possible. Yet the specific information needs of dyslexic people are being lost within a strategy which is based upon the needs of the majority of disabled people. Essentially, dyslexic people are facing limited travel horizons and mobility-related exclusion as a result. This provides important evidence that travel information providers need to ensure that priority is now given to addressing the specific needs of dyslexic people. As a key Government initiative, Transport Direct provides a particular opportunity to embrace the above recommendations and provide better travel information services for dyslexic people.

The transport industry needs to understand that the challenges faced by dyslexic people and the needs of these individuals are distinctly different because of their cognitive makeup. Furthermore, the cognitive demands placed upon these individuals are considerably higher than those placed upon non-dyslexics, which makes the practical difficulties more pronounced and persistent. The inextricable link that exists between dyslexia and stress will also make the challenges more significant. Crucially, travel information is seen as a key support mechanism across the entire journey lifecycle for dyslexic people and vital to managing the symptoms of dyslexia and psychological well-being.

Key Recommendations

The table below outlines the key recommendations arising from the research, and to whom they are addressed.

| RECOMMENDATION | ADDRESSEE |
|---|---|
| Greater support for travellers with numerical processing weaknesses related to the 24-hour clock | All travel information providers |
| Allow the user to personalise information presentation at the interface rather than via browser settings (e.g. via a 'Textic'-style | All online travel information providers |

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| toolbar on the interface) | |
| Greater support for user's with spelling weaknesses | All providers of online journey planning services |
| Review of end leg information provision | All providers of online journey planning services |
| Use of Virtual Reality to support pre-trip journey planning (i.e. an online 'deluxe dry-run' facility) | All providers of online journey planning services |
| Greater use of visual representations and 'contextual references' to support text-based journey planning information | All providers of pre-trip planning services, particularly online providers |
| Accessibility testing with people with learning disabilities, including a good-sized sample of dyslexic people | All providers of online unimodal and multimodal travel information services |
| Implementation of a more pictorial and schematic approach to presenting journey information (e.g. the journey 'timeline' provided by Transport Direct) | All providers of online unimodal and multimodal travel information services |
| Review of readability and usability of car journey planning information | All providers of online and telephone-based car journey planning services |
| Review of information provided for drivers when delays occur | The Department for Transport, the Highways Agency, providers of online and telephone-based car journey planning services |
| Greater use of visual representations and 'contextual references' on maps, online and offline | Providers of road maps and A to Z maps, providers of online map-based information |
| Provision of personalised maps to supplement personal journey planning information | Providers of online map-based information |
| Review of usefulness and usability of information provided via mobile devices | All travel information services providing (or those with the potential to provide) mobile services |
| Review of usefulness and usability of live travel news | All travel information services providing live travel news |
| Review of usefulness and usability of information currently provided on-board vehicles, and level of consistency of information provision within and across regions | All bus and train operators |
| Review of usefulness and usability of information currently provided at local bus stops and railway stations, and level of consistency of information provision within and across regions | All bus and train operators |
| Access to a greyscale plan of the station highlighting route to required platform, along with the information provided in a bulleted list of instructions | All train operators |
| Access to a greyscale plan of the train highlighting route to reserved seat | All train operators |
| Greater support for bus and coach users with numerical processing weaknesses, particularly in relation to front of vehicle displays | All providers of bus and coach services |
| Audible information provision at bus stops and on-board | All bus operators |
| A designated member of staff available at | The Department for Transport |

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| every mainline station trained to a good standard in disability awareness, including dyslexia awareness | |
| Elocution training for ground-level staff and telephone operators | The Department for Transport |
| Increase access to fare information, online and offline | The Department for Transport |
| Ensure dyslexic people are included within any future strategies related to Demand Responsive Transport and Flexible Transport Services | The Department for Transport |
| Review of cost and availability of satellite navigation systems to people with cognitive disabilities such as dyslexia | The Department for Transport |
| Stress management advice and training available to public transport and road users | The Department for Transport |
| Create a comprehensive document for the transport sector providing operational guidance on how to address the needs of dyslexic people | The Department for Transport |
| Adapt an existing online travel information service (e.g. Transport Direct) to better suit the needs of dyslexic people in order to assess the effects upon mode choice, behaviour and attitudes towards different modes | The Department for Transport |
| Undertake quantitative-based research in order to generalise the existing research findings to dyslexic people outside of those already studied | The Department for Transport |
| Qualitative-based research involving dyslexic people under the age of 18 and between 60-75 who travel/have the potential to travel independently | The Department for Transport |
| Research into the perceptions and interventions of transport sectors in other countries, particularly Northern America and the Nordic countries | The Department for Transport |
| Ensure trees do not obscure road and bus stop signage | Public Authorities |
| Support for the 'Myguide' initiative outside England | Northern Ireland, Scottish Government, National Assembly for Wales |

Importance of the Research

The research synthesises the two previously disparate literatures of dyslexia and transport studies. By investigating the attitudes and aspirations of dyslexic people regarding travel information provision, a significant research deficiency has been addressed. The research effectively supports the drive towards greater recognition and awareness of dyslexia within the transport industry. In order to have a positive impact upon the travel behaviour of dyslexic people and their perceptions towards the transport industry, policymakers and service providers need to understand what it means to have dyslexia before they can address it within travel information provision. Travel information provision is

seen as a significant barrier to travelling via public transport in particular. Therefore, the subsequent effects of better information access upon public transport patronage and the perceptions of the transport industry as a whole could be extremely positive.

The implications of the research in relation to social inclusion and independent mobility are significant. It is certain that changing the fundamental attitudes of the transport industry towards dyslexia would provide a positive step forward in achieving greater social inclusion for dyslexic people. By understanding the challenges and providing assistance that is useful and useable to the dyslexic traveller, it is hoped that this will broaden the travel horizons of dyslexic people. This in turn could provide greater access to opportunities previously unavailable, create better social opportunities, and more positive life experiences. To this end, the research has further embedded the social model of disability within dyslexia, and the social model of dyslexia within transport.

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