



Review article

A study on mobility improvement for intellectually disabled student commuters[☆]

Fumihiko Nakamura^{a,*}, Kazumi Ooie^b^a Graduate School of Urban Innovation, Yokohama National University, 79-1, Tokiwadai, Hodogaya, Yokohama 240-8501, Japan^b Tochigi Prefectural Government Office, Japan

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ABSTRACT

In Japan, the number of people with intellectual disabilities has been increasing and efforts are being made to improve their access to public facilities and transport. Although the Japanese government has published a guidebook on effective communication with people with intellectual disabilities and a list of accessibility-related recommendations for property developers, the fact is there has been insufficient research on problems with this population's mobility and the inadequate coordination among stakeholders. As a result, the treatment they receive is not always acceptable.

In this study, we explore the public transport needs of people with intellectual disabilities and the need for children with such disabilities to commute to special needs schools. This presented an opportunity to look at providing them with training in the use of public transport. To that end, we examined two progressive initiatives from overseas—one in Curitiba, Brazil and the other in Nordhorn, Germany—to consider whether their ideas could be adapted for use in Japan.

Curitiba uses a special needs school bussing system that prioritizes transport efficiency over convenience by making students change buses at a central transfer station. Our study showed that while a support system is needed to help students change buses, compared to the current situation in Japan, there may be the potential for reduced travel time. Also, we could expect a significant educational effect from students engaging in group behaviors related to interacting with a variety of people while changing buses within a prescribed time. Further, it showed that implementing such a system would require consensus building among the schools that would use it and the acquisition or construction of a central transfer terminal.

Nordhorn employs a public transport operator-led training program to teach students how to commute to school on public buses. In this study, we conducted a proof-of-concept training program based on a field study of Nordhorn's practices. The results showed that an educational effect was derived from the participation of the bus company in the training—one that could not have been obtained through the participation of teachers and parents only. We also found that there were several issues to address regarding the program's implementation, such as the need for the roles of the school and bus company to be clearly defined.

Overall, our findings suggested that to actually implement mobility support in school commuting environments in a way that will improve the mobility of intellectually disabled people requires not only the cooperation of schools, but also contributions from transport operators, road administrators, and traffic administrators. Because the contributions of these entities are essential, awareness-raising activities and a system for promoting common understanding among them are vital.

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* Corresponding author.

E-mail addresses: nakamura-fumihiko-xb@ynu.ac.jp (F. Nakamura), miwa.u.u.mii@gmail.com (K. Ooie).

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1. Introduction

1.1. Background

As of the end of 2006, there were 550,000 people with intellectual disabilities in Japan, representing 0.4% of the general population. In addition, amid an increase in the number of people with disabilities, the number of intellectually disabled people has also been on the rise. This suggests that the combined number of people with intellectual and developmental disabilities has been growing recently [1,2]. As for the cases in other developed countries, according to some references, the tendency looks similar [3,4].

In Japan, the Law Concerning the Promotion of Easier Movement for the Elderly and People with Disabilities (the “new barrier-free law”), enacted in December 2006, consolidated two previous laws: the Law Concerning the Promotion of Easier Movement for the Elderly and People with Disabilities on Public Transportation (the “barrier-free transportation law”) and the Law Concerning the Promotion of the Construction of Specified Buildings for Easier Access by the Elderly and People with Disabilities (the “building access law”). These measures were intended to encourage the integrated development of passenger facilities and buildings, as well as passageways between them. As specified in this law, the target population is “the elderly and people with disabilities, etc.,” meaning not only the physically disabled, but all people with disabilities, including those with intellectual, developmental, or mental disorders [5,6].

When the law was enacted, the only measure in place to address intellectually or otherwise disabled travelers was guidance for staff to speak slowly and politely and use repetition during interactions. However, when the target population was specified to include all people with disabilities, measures addressing their needs had to be reviewed. As a result, two approaches were taken in the development of barrier-free access policies for people with intellectual or similar disabilities. One policy addressed personal interactions and the other the design and outfitting of facilities. Both were developed for the benefit of public employees, such as those working in transportation systems and public facilities, and published by the Ministry of Land, Infrastructure, Transportation and Tourism in 2009. The personal interaction policy was described in the Handbook for Communicating with People with Intellectual, Developmental or Mental Disabilities and the facility development policy was presented as Recommendations Related to Accessibility for People with Intellectual, Developmental or Mental Disabilities in the Design and Outfitting of Facilities [5,6].

The communication handbook was developed based on the fact that, characteristically, people with intellectual disability or similar disabilities do not appear to be disabled but have trouble communicating. It includes information on each type of disability, its associated behaviors, and how employees and others in public transportation systems and public and commercial facilities should best respond. There has been

an expectation that if the improved content of the handbook were put into practice, it would contribute to making society more inclusive. However, the reality is that transport operators are unaware of the handbook’s existence, suggesting that treatment of people with intellectual disabilities may remain poor.

The accessibility recommendations related to facility development summarize the environmental issues for people with intellectual disability and similar disabilities that were considered too difficult to address when the barrier-free transportation law was enacted. This was the first time that recommendations for measures to accommodate the intellectually disabled were made regarding facility development, so they were not part of the legally binding “barrier-free accessibility guidelines.” Moreover, just as with the handbook, in reality, transport operators are not aware of these recommendations. This suggests that, in some cases, people with intellectual disabilities are not being suitably accommodated. Further, there remain numerous problems, such as inconsistencies between the actual design and outfitting of facilities and the recommendations, as well as poor general knowledge about the issues. Contributors to this situation could include inadequate research on topics related to the mobility of people with intellectual disabilities and poor coordination among stakeholders.

As for in the case of the United States and European countries, there have been several guidelines and manuals on intellectual disabilities, most of which cover quite a little on transportation infrastructure related issues [7,8].

1.2. Objectives of the research

In this study, we looked at the public transport needs of people with disabilities wishing to participate in their community. The need for children with such disabilities to commute to special needs schools presented the opportunity to look at providing them with training in the use of public transport.

Through reviewing the researches and reports for practical experiences related to these objectives. Several points were identified. In most countries, mainly due to security and safety reasons, each school uses its own transport system which is exclusive for the students in that school even in case of students without disabilities. We had several field surveys for the countries and cities with sufficient amount of experiences on public transport especially bus transport trials. Among them, Germany and Curitiba, Brazil were picked up. By interviewing with Prof. Manfred Boltze, we found there is the only one interesting project in Germany named as MogLi, which was funded by the German Federal Government and Mr. David Monningen contributed to the project a lot from Academic perspective [9,10,11]. As for Curitiba, there are several papers on its advance bus systems [12], based on which, in our field survey with interviews to URBS (the public organization for public transport Curitiba), we found the city has been challenging the advanced system of school bus sharing where students with different

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