

III—A BUS TRAINING PROGRAMME FOR MENTALLY RETARDED ADULTS*

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One of the major problems facing the moderately to severely retarded adult who lives at home is that he is dependent on his family for virtually all his needs. However, this dependency is mutual in that parents are bound by the needs of their child. The parents have to arrange transport if he attends a day training programme and in many cases accompany their youngster to and from the agency. In other instances the parents arrange for a taxi or a private bus to transport their child from door to door.

This situation provides a challenge for the development of an effective training programme. The problem is clear and provides an opportunity for the development of a programme strategy where principles of learning can be easily applied (Brown, 1975). The programme can be broken down into small units, there are clear decision points where the individual has to make appropriate discriminations, and success and failure at each point can be clearly recorded. Success on such a programme brings immediate gains to the individual and increased freedom for other members of the family. To be successful the individual needs a number of skills. He should be able to recognise bus numbers and ideally be able to ask for advice and help. Social behaviour should be appropriate and skills of attention and coin recognition are necessary. Equally important, the individual has to apply his knowledge at the appropriate time.

One of the drawbacks to such a training scheme is the need for manpower. Each trainee who makes his way from an agency to his home requires slightly different training from his peers and the amount of training required varies. Thus much of the training will be on a 1:1 basis and may be time consuming in terms of staff resources. On the other hand, if training is successful considerable individual and community gains will have been made. There follows an account of a bus training programme which was designed for severely and moderately retarded adults attending a pre-vocational training unit.

Method

The bus training programme formed part of a comprehensive programme within a pre-vocational unit. The aim of the programme was to teach trainees to use the transit system, independently of supervision, to and from home and the day programme. On entry to the pre-vocational unit each trainee who appeared to have some knowledge of the transit system was required to use the bus between the Institute and home with a staff member travelling incognito. If the individual failed the test or had never used a bus on his own he was required to enter a training programme. A variety of skills were necessary and the trainee was observed so that gaps in learning could be filled.

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These skills included:

1. Crossing the street with and without walk-lights.
2. Recognising the correct bus by number.
3. Recognising money and selecting the exact amount.
4. Requesting (when necessary) for transfer to another bus.
5. Showing appropriate social behaviour on the bus.
6. Using a pay telephone when problems arose. (This was only taught in a few cases.)

Each of these tasks was broken down into smaller units. For example, finding a seat on a bus was dealt with as follows:

1. Look for and decide on a seat quickly.
2. If the seat is totally unoccupied choose position next to the window.
3. If need help or direction take a seat close to the front (i.e., first 1 or 2 seats).
4. If no seat available move to rear and stand holding on to the back of the seat or rail from ceiling.

Appropriate social behaviour:

1. No talking to strangers.
2. If asked directions say "I don't know."
3. No talking across aisle.
4. When sitting keep feet on floor.
5. Do not place mouth on rails.

The above were used as guidelines to the instructor and demonstrated by him when necessary after observing the trainee. Initial training took place when passenger loads were light, though later training included dealing with crowded conditions. The latter was not dealt with until the initial training had been overlearned.

The programme was broken into 3 phases which are described below.

- Phase 1. Instructor and trainee take the bus to the trainee's home.
Instructor demonstrates to the trainee the procedure to follow.
- Phase 2. Instructor and trainee take the bus home, but this time the staff member asks the trainee what to do and provides help where necessary for incorrect decisions or inability to make a decision.
- Phase 3. Instructor goes with the trainee, but the trainee shows the instructor the total procedure.
- Phase 4. Trainee travels alone and the instructor follows in a car or another individual unknown to the trainee travels on the bus.

In some cases variations in the above outline were necessary because of particular difficulties which arose. Each phase was presented as frequently as necessary to bring about accurate performance. Travelling from the Institute to home and return three times in succession was regarded as success. It was considered that the trainee was then ready to travel without staff observation.

Initially trainees performed the trip in one direction only on each training occasion. Training took place two or three times a week and greater involvement was not possible due to lack of staff. This resulted in spaced practice which was probably useful in terms of the training regime. The staff member or volunteer working with the trainee was required to record details of each trial, such as the degree of success and problems encountered.

TABLE 1
Description of Sample (n=15)

	Age Year	Peabody Picture Voca. I.Q.	Coloured Matrices I.Q.
\bar{X}	20.7	52.3*	57.9
range	16-25	10-73	37-87

*1 subject excluded as untestable.

Subjects

Fifteen trainees took part in the training programme. Ages and intelligence levels on the Peabody Picture Vocabulary Test and Raven's Coloured Matrices are shown in Table 1.

Results

The average number of trials (journeys) to success was eighteen with a range of three to fifty-one, though half the subjects carried out the training in eight trials or less. No trainee failed. Spearman's Rho indicates that the correlations between number of trials and (i) Peabody IQ and (ii) Matrices IQ lie below +0.4 and are insignificant, indicating that intelligence is not a valid predictor of success rate under these circumstances, despite a wide range of intelligence level in the group. A further seventeen trainees have now received the programme, the great majority of whom have been successful.

The majority of trainees experienced problems, though these were extremely varied. Six trainees showed anxiety by demonstrating a reluctance to participate (e.g., fear of crowds or getting lost) and made tentative decisions and responses, while three showed excitement in participating in the programme. Some trainees were socially appropriate and recognised where to get off the bus, but would not carry out any action unless prompted verbally by the trainer (e.g., nine trainees required prompting to ring the bell to stop the bus). At least seven trainees had major difficulties in using crosswalk signs. Although they could push the pedestrian button, they had problems in attending to the signs and noting when the walk light came on. Attention problems of this type were increased by crowded conditions or new situations and illustrated the importance of breaking the task down into small steps, using modelling behaviour and initiating the programme when few travellers were around. Recognising bus numbers was a problem for over half the trainees. They did not know where to look or which number to look for. Others had difficulty in finding the exact fare at the appropriate moment. Once on the bus a number had difficulty in finding a seat, and behaved inappropriately (talking to everyone around, sucking parts of the bus, inappropriate language). A few had difficulty in recognising their bus stop or ringing the bell in time. Occasionally they would ring at the wrong place, showing over-anticipation. Eight trainees had considerable difficulty in transferring from one bus to another or forgot to retain the transfer ticket. In one case money which was given by the parent for bus travel was spent on pop. A few trainees had difficulty in standing when the bus was moving. Rocking behaviour was observed in one trainee. Furthermore, in cases who had several problems, as soon as one difficulty was mastered the inappropriate behaviour appeared on a subse-

quent occasion. The most frequent problems were using the crosswalk, recognising the correct bus, taking appropriate action to stop the bus, and transferring to a second bus.

Discussion

The success of the training programme is clearly apparent and trainees continued to use the transit system. No trainee has required retraining. That is, once the skill is properly learnt it is retained regardless of the IQ level of the individual. This is consistent with research studies indicating that the retarded do not appear to have major problems if a task is well learnt in the first instance (Gold, 1972). The behaviour which has been described is typical of learning in the retarded (see Gunzburg, 1968), for not only was there considerable variability amongst trainees in their baseline level of performance, but also in the amount of time and number of trials required to gain an adequate skill level. Performance in the early part of training tended to be erratic; skills performed accurately one day being absent the next. The training scheme was complex and had to be learnt to perfection before the individual could use the skill independently. Individuals had varying transit requirements both in terms of where they needed to go and their level of previous experience.

Occasionally trainees had problems verbalising because they became confused. In two cases trainees had no language. In these situations it was necessary for the supervisor to design special procedures. For example, in one case the supervisor made a small card with the words, "Transfer please," which the trainee could show to the driver on entering the bus.

Quotes from training notes illustrate some of the problems:—

Trainee B

- Trip 1: "B was a little anxious . . . is alert to crossing the street; watches for the walk sign, does not know how to get home after getting off the bus nor does she know where to get off the bus."
- Trip 2: "Did much of the work for herself, she needed reminding to watch for the 'walk' sign, and showing where to go after getting off the bus."
- Trip 3: "Went both ways today; went to the bus stop and crossed the street appropriately, identified bus number and the direction from which it came. Still confused by landmark for getting off."
- Trip 4: "B went a little ahead of the supervisor and did well on her own, knows where to get off, made one wrong turn on her way home."
- Trip 5: "O.K. with minor prompting."
- Trip 6: "Did great all the way except rang the bell too soon."
- Trip 9: "After absence of two weeks able to do everything well, with parents' consent will send staff incognito with B on next occasion."
- Trip 12: "Let two of the buses go by due to confusion over numbers—otherwise correct. Supervisor present who she did not know."
- Trip 15: "Completed entirely accurately."

Trainee M

- Trial 5: "Now knows he needs the No. 1 bus. Able to show the general direction of the bus stop. Forgot to ask for transfer when reminded. Request incomprehensible to the driver. Lost his transfer ticket. When getting off the bus he had to be reminded to hold the door."

M took fifty trials to learn the transit skills.

A number of points arose during transit training. Demonstration and modelling behaviour appeared highly important and initially many trainees seemed highly dependent on cues from the supervisor. It seems possible that the trainees had formerly been in situations where they had been told what to do rather than being requested to lead after a period of demonstration and prompting. As learning occurred in the present study prompts naturally diminished to the point that the only support was the presence of a supervisor travelling with the trainee. This was followed by a person unknown to the trainee travelling in the same bus, and, finally, following by car. In several cases parents expressed anxiety about their child travelling alone, but the present results suggests that parental support, advice and training could have been carried out at a much earlier age. Meetings with parents, after successful implementation of the programme, indicated that they found much more free time and were less restricted. The new learning shown by their children was an indication that, although they were young handicapped adults, the learning of other skills might be possible. Thus outlook and motivation of the parents appeared to undergo an important change.

The form of checking system employed and the requirements for over-learning appeared to provide necessary safeguards for erratic performance during the learning period. At first training was not carried out during "rush hour." Initially learning needed to take place when environmental confusion was minimal. Eventually trainees carried out the journey at normal times, and had to deal with rush hour problems. Very few difficulties were observed and problems appeared largely associated with the anxieties of parents and staff.

Two further recommendations should be made:

1. The route should be carefully planned before training. In several instances the route suggested by parents was not always the simplest. For example, a trainee who was easily confused by stimulation was successful in transferring buses when a less crowded stop was used.
2. The trainee's baseline level of performance should be carefully observed and training should progress in small increments with the subject gradually taking over from the model. Furthermore, training must be over-learned.

Finally it is important to point out that intelligence level was a poor predictor of ability to learn transit skills and had a low correlation with the amount of time and trials necessary for learning. The present study convincingly demonstrates that moderately and severely retarded adults are capable of long term success at such skills.

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NOTE: The City Transit System is now discussing with the Institute the possibility of providing a half-day orientation session for new bus drivers.