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Remembering the Shopping: Strategies Employed by Pupils with Moderate General Learning Disabilities in an Everyday Memory Task

This study investigates the degree to which children with moderate general learning disabilities employ a range of strategies in a 'real-life' memory task. The educational implications of the results are discussed.

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It is frequently suggested that people with moderate general learning disabilities have particular problems with tasks involving memory skills, especially where the strategic use of memory is involved; and laboratory studies tend to confirm this. Not only do people with learning difficulties do less well on memory tasks than those without such difficulties, but they often seem unaware of the availability of memory strategies, and even when they do know about strategies, they are unlikely to make use of them. (Dockrell and McShane, 1993). Although the link between metacognitive knowledge, strategy use and memory performance is by no means perfect, generally speaking, greater strategy use leads to better performance. Thus failure to employ appropriate strategies provides one explanation of why people with learning disabilities tend to perform less well on memory tasks than individuals without such difficulties. However, recent work with both young children without disabilities and children with mild general learning disabilities has suggested that they may do considerably better in real-life situations than in laboratory type tasks.

'REAL-WORLD' MEMORY TASKS

In the study reported here pupils with moderate general learning disabilities were tested on two versions of a shopping task. All the children behaved strategically in order to perform the task, and were able to remember considerably more items from the shopping list than might have been predicted from the laboratory studies.

This study therefore supports the view, that like other children in the early stages of cognitive development, children with moderate general learning disabilities are able to perform better on 'real-world' memory tasks. Teachers therefore need to concentrate their efforts on teaching directly the memory skills which are relevant in everyday life.

INTRODUCTION

A number of authors have suggested that, whereas children under the age of about seven are unlikely to use strategies (such as rehearsal or categorisation) in laboratory-type memory tasks; and that in general they perform poorly at such tasks; they may perform considerably better in everyday type tasks (eg. Kail, 1990). Recently Male (1994; 1996) has extended this work to pupils with mild general learning disabilities, demonstrating that they too perform better on memory tasks with 'real-world relevance' (such as remembering the number of a car involved in an incident, or taking their swimming things to a swimming party). Given the general agreement that there is at least some link between strategic awareness and efficient learning, and the increasing interest in the use of 'thinking skills' programmes in schools (eg. Coles and Robinson, 1989) this discrepancy is potentially of considerable importance for teaching children with general learning disabilities.

PERFORMANCE FACTORS

The extent to which a task is relevant to the real world (task authenticity) is not, however, the only factor known to affect performance. The following factors also play a part:

- **task difficulty**
- **motivation**
- **knowledge of the effectiveness of particular strategies**
- **and the familiarity of items to be remembered**

Additionally, Kail (1990) points out that some of the simplest strategies, which may well be employed by both children and adults in everyday tasks, such as placing the to-be-remembered item in a strategic location (e.g. putting the bag of swimming things by the door) are unlikely to be of use in traditional laboratory tasks.

RATIONALE FOR THE STUDY

Combining the findings of these various studies suggests that children (with or without learning disabilities) are likely to display the most sophisticated strategic behaviour of which they are capable in 'real-world' tasks which are both motivating and familiar, but which are comparatively challenging for them. The aim of this study was therefore to investigate the range of strategies employed by children with moderate general learning disabilities in such a 'real-life' memory task, and to draw out the educational implications of the findings.

METHOD

Participants

The participants were six pupils attending two schools for pupils with learning disabilities in an outer London Borough. They were selected from their schools by their class teachers as part of a wider study and were judged by their teachers to be amongst the most capable in their respective age groups. Testing on the British Picture Vocabulary Scales (Dunn, Dunn & Whetton, 1982) after the tasks had been completed confirmed that all six pupils were functioning within the moderate range.

The tasks

Task 1 consisted of a list of five familiar everyday items (potatoes, milk, baked beans plus two items known to appeal to the particular child) to be bought from a local grocery store.

Task 2 consisted of a list of ten familiar items (again including two items chosen by the individual as 'favourites') to be bought from several local shops situated adjacent to one another (grocer, newsagent, butcher and greengrocer). A check was made on the shops prior to the experiment to ensure that at least three shops would have to be visited to obtain all the items. The purpose of this part of the experiment was to examine whether the participants would categorise the items, which were read out in random order, according to the shop from which they could be purchased.

The experiment was designed to allow observation both of the strategies used by the participants to remember the list and to recall the items once at the shops.

Procedure

Participants were seen individually on two separate occasions, (once for Task 1 and once for Task 2). Once the list had been read out, the participant was asked to

repeat the items required, and if they were able to do so they were instructed to do their best to remember and asked how they intended to go about this. Four of the six pupils took part in both tasks, while Diane took part only in Task 1 and Neil only in Task 2.

If fewer than the total number of items was recalled, participants were asked how many items they had been asked to remember, and whether they needed help to remember 5/10 items. Participants who said that they would need help to remember that number of items were asked how the experimenter could help them to remember. Those who did not think they would need help were asked to repeat the items they could remember once again. Since the purpose of the experiment was to ascertain what strategies were available to the participants, requests for help in employing a strategy (eg. for the experimenter to write a list for the pupil) were responded to positively.

RESULTS

Task 1

Of the five pupils who took part in this task, four stated that five items would need active remembering, and all four employed one or more strategies to help them remember the list. On arrival at the shops three of these four pupils overtly employed recall strategies. The fifth pupil displayed no visible strategy either for remembering or for recalling the list.

Table 1 summarises the mnemonic knowledge displayed by the participants, the strategies they employed and the number of items remembered for Task 1.

Task 2

Of the five pupils who took part in this task, three knew that 10 items would need active remembering, and used one or more strategies to help them remember the list. On arrival at the shops two of these three pupils overtly employed recall strategies. Table 2 summarises the mnemonic knowledge displayed by the participants, the strategies they employed and the number of items remembered for Task 2.

Individual use of mnemonic strategies

Nadia

Nadia knew that both five and 10 items required active remembering and used rehearsal in order to memorise both lists, combined with the number 10 for the 10 item list. She knew that 10 items were too many to rehearse and only rehearsed six

Table 1 Mnemonic knowledge displayed by participants, strategies employed and number of items remembered (Task 1)

Participant		**Nadia**	**Alex**	**Shamil**	**Diane**	**Dominque**
Mnemonic Knowledge		5 items need active remembering	5 items need active remembering	5 too many for rehearsal alone & need active remembering	5 items need active remembering	
Strategies employed to memorise list	Rehearsal	✔	✔	✔	✔	
	Written List			✔		
	Number of items on list used as cue	✔	✔	✔	✔	
	Asks someone else to remind					
Strategies used to recall list at shops	Rehearsal		✔	✔	✔	
	Written list			✔		
	Number of items on list used as cue		✔	✔	✔	
	Asks someone else to remind					✔
Number of items recalled		4	5	5	5	4

Table 2 Mnemonic knowledge displayed by participants, strategies employed and number of items remembered (Task 2)

Participant		**Nadia**	**Alex**	**Shamil**	**Neil**	**Dominque**
Mnemonic Knowledge		10 items too many for rehearsal alone & need active remembering	10 items too many for rehearsal & need active remembering	10 items too many for rehearsal alone & need active remembering		
Strategies employed to memorise list	Rehearsal	✔	✔	✔		
	Written List					
	Number of items on list used as cue	✔	✔	✔		
	Asks someone else to remind					
Strategies used to recall list at shops	Rehearsal		✔	✔		✔
	Written list		✔			
	Number of items on list used as cue		✔	✔		
	Items grouped by shop	✔		✔	✔	✔
	Asks someone else to remind			✔		
Number of items recalled		5	5	6	3	5

items from the 10 item list successfully, but did not employ an alternative strategy either spontaneously or with prompting. She displayed no visible strategy for recalling either list on arrival at the shops. She had to be prompted after each item for the five item list and after all but one item from the 10 item list, grouping together the two items to be bought from the grocery shop. She recalled four items from the five item list and five from the 10 item list. Although Nadia was not observed to use the number 10 as a cue when at the shops, she knew that there were more items to be bought than she had successfully purchased.

Alex

Alex used rehearsal in conjunction with 'ticking off' the items on the five fingers of his left hand to remind him of the number of items to be bought to memorise the five item list both to memorise the list and to recall the items at the shops. Alex also used rehearsal in conjunction with the number 10 as a cue to memorise the 10 item list, but did not employ any visible recall strategy for this list when at the shops. However, he did not require prompting to purchase the 5 items he obtained and grouped together the items to be bought from two of the three shops he visited. He knew that 10 items were too many to rehearse, but did not employ an alternative strategy either spontaneously or with prompting.

Shamil

Shamil knew that both five and 10 items required active remembering and stated that both were too many to rehearse. For the five item task, he asked for a list to be written. He was able to read most of the items and asked for help to read those of which he was unsure. Once at the shops, Shamil used rehearsal to recall the list, asking for permission to look at the written list as a check when he could not remember. However, for the 10 item task Shamil did not ask for a list, even when prompted. Once at the shops he used rehearsal as his recall strategy, He also used the number 10 to remind himself by counting the items in his basket, but could only recall part of the list and sought the help of the experimenter for those items which he was unable to recall by himself. Shamil grouped together the items to be bought from the newsagent, but then had to be prompted for all the other items he could remember, obtaining six of the 10 items from a total of three shops.

Diane

Diane took part in only the five item task. She used rehearsal both to memorise the list and at the shops. In addition she used the number 5 as a cue for recall.

Dominque

Dominque used no visible strategy to memorise the items from either the five or the 10 item list, nor did she show awareness that the items needed to be actively remembered. However, for the 10 item list she spontaneously began to rehearse the items on the way to the shops. Once at the shops, for both lists, she asked for help from the shop assistant to obtain the items she wanted (rather than looking for them herself) and successfully recalled four from the five item list, and five from the 10 item list. She also grouped together the three items to be purchased from the greengrocer's, but had to be prompted to buy the other two items she could remember, visiting three shops in all.

Neil

Neil took part in only the 10 item task. He showed no awareness that 10 items needed to be actively remembered and did not use any visible strategies for either memorising or recalling the list. He also forgot how many items were on the list. However, he did group together the two items to be bought from one of the shops, purchasing three items in all.

DISCUSSION

The mnemonic awareness displayed by the participants in this study was considerably greater than might have been predicted given the severity of their learning disabilities. All but one were aware of the need for active remembering and showed some awareness of task difficulty. A total of four strategies (rehearsal, counting, writing a list and asking for help), all appropriate to the task concerned were employed, with one pupil making use of all four. All also showed some embryonic awareness of categorisation by grouping together items to be purchased from the same shop.

Of course, all the pupils who took part in the experiment are likely to have had previous experience of shopping, both at school and at home, and this task was deliberately chosen to have elements of both familiarity and challenge. But, within this context, four of these six children with moderate general learning disabilities were able to employ mnemonic strategies creatively and effectively.

However, the constraints imposed on their performance by their general difficulties are clearly shown in the differences between the two tasks. Only two of the participants were able to count up to ten, and thus one strategy which they used effectively for the five item list could not be effectively employed for the longer list. This was particularly evident in the case of Alex, who effectively

combined counting with rehearsal at both the memory and recall stages of the five item task, but failed to show such a sophisticated level of performance on the ten-item task. Furthermore, Shamil, who asked for a list, was not able to either write it for himself, or read it without help.

CONCLUSIONS AND IMPLICATIONS

Like typically developing young children and children with mild general learning disabilities, these children with moderate general learning disabilities showed a much greater degree of mnemonic awareness on a real-world task than might have been expected from previous laboratory studies. Apart from rehearsal, the strategies employed by the pupils in this study were not conventional internal mnemonic strategies, yet they were very similar to those which would be employed by people without learning difficulties for the same type of task. Counting, making a list, categorising items by the shop from which they are to be purchased and asking companions for help all figure as everyday strategies.

Pupils with moderate general learning disabilities might be helped to make more effective use of those strategies they do use by explicit training in those areas where general problems impede their performance, such as counting and reading. They could also be encouraged to employ the type of task-specific categorisation skills shown here, for example through instruction to group items according to the shop from which they are to be purchased, or the recipe for which they are required when memorising and when recalling them.

As this was a small exploratory study, further research is required to investigate the use of strategies by children with moderate general learning disabilities in other 'real-world' tasks. For example, future investigations could examine strategies employed by these pupils to remember items required for school on the following day, or for a visit away from home. Examination of the strategies employed to remember the important aspects of sporting events (the score, who scored etc.) could also potentially be illuminating. As Male (1996) has suggested, teaching could also usefully concentrate on helping pupils with learning disabilities to adapt the strategies that work for them to school-type tasks, rather than targeting the conventional mnemonic strategies which have had so little success in the past. It is perhaps time we moved from investigating the reasons why people with learning disabilities fail on many mnemonic tasks and started asking what enables them to succeed in those where they are relatively competent.

REFERENCES

Coles, M.J. & Robinson, W.D. (1989). *Teaching thinking*. Bristol: The Bristol Press.

Dockrell, J. & McShane, J. (1993). *Children's learning difficulties*. Oxford: Blackwell.

Dunn, L.M., Dunn, L.M. & Whetton, C. (1982). *British picture vocabulary scales*. Windsor: NFER-Nelson.

Kail, R. (1990). *The development of memory in children*. San Francisco: W.H. Freeman.

Male, D.B. (1994). Improving the memories of children with moderate learning difficulties by application of appropriate motivational techniques. *Education and Child Psychology, 11* (2), 56-67.

Male, D.B. (1996). Metamemorial functioning of children with moderate learning difficulties. *British Journal of Educational Psychology, 66*, 145-157.