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Teaching Number Skills in the Special School: The Teacher's Viewpoint

How effective is the teaching of numeracy to children with moderate mental handicap? A small scale survey of teachers' attitudes and methodology in Dublin special schools suggests the need for more developmentally ordered approaches and objective assessment.

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SEEKING TEACHERS' OPINIONS

The development of curricula for children with severe learning difficulties has always been an area of popular interest (Crawford 1980). Within the Republic of Ireland the development of a suitable curriculum for these children is still a source of much discussion (Dept. of Education, 1984). However, such discussion and debate is greatly enhanced when the views, opinions and experiences of teachers are listened to (O'Connell, 1987).

A central aim of the special school curriculum is to raise children's social competency in numeracy. Indeed, the ability to handle number is a most important skill (McEvoy in press). Although some investigators have sought teachers' views on the aims of special education as a whole (Hughes, 1975; Carden and Robinson, 1985), information on specific areas of the curriculum, such as numeracy is sadly lacking. Indeed, the teaching of number skills in schools for children with a moderate mental handicap, can often be overshadowed by the need to achieve a given standard in language and social skills (Gibbs, 1982; Leeming et al, 1979). Consequently numeracy is an area of the curriculum which has received little attention.

The present paper reports on a small scale survey, which attempts to examine attitudes to the teaching of counting and number skills in the special classroom. The survey was carried out, as part of a wider research project aimed at assessing the feasibility and effectiveness of simple number games in the teaching of counting (McConkey and McEvoy 1986).

AIMS OF THE SURVEY

The main aims of the investigation were: 1) to gather general information on teachers' attitudes to counting and number work 2) to obtain information on teaching methods and materials that are presently being employed in the classroom.

THE INTERVIEWS

An explanatory leaflet and letter of introduction were circulated to all teaching staff employed by special schools attached to St. Michael's House Services, Dublin. Six teachers from the four schools circulated, expressed an interest in the topic and agreed to be interviewed.

THE TEACHERS

Six teachers participated in the study, two male and four female. Teachers' ages ranged from 25 to 50 years, with one in the 25 - 29 year age group; one in the 30 - 34 year range; two in the 35 - 39 year range and two in the 45 - 49 age range. Teachers had a wide range of experience. Participants had been teaching for an average of 14.8 years (range 5 - 22) years, and specifically teaching children with a mental handicap for on average 8.8 years (range 4 - 18 years). Two of the teachers had received their training in the U.K., the remainder in Ireland. All, except one had completed the Special Education Diploma Course at St. Patrick's College, Drumcondra.

PERCEPTIONS OF NUMBER

The interview schedule use comprised of a series of 13 open-ended questions covering areas such as the teaching and assessment of number in the classroom. The interviews were carried out in an informal relaxed atmosphere and lasted for about 40 minutes on average.

THE TEACHING OF NUMBER

Only two teachers expressed familiarity with a particular theory or approach to the teaching of number, both referring to the work of Maria Montessori. None of the teachers received information on the teaching of number skills to children with moderate mental handicap during teacher training. Five of the teachers found number a difficult area to teach. For example, one teacher remarked, ".....it's erratic, some children take a long time to grasp the context, others learn and lose it". Another reported "Some can count and yet they still don't seem to understand anything". Teachers did not use any special materials when engaged in number work, simply concentrating on the use of small objects, coins, matching and sorting activities, and identifying shape and colour. Only two teachers mentioned counting.

ASSESSMENT AND NUMBER ABILITY OF PUPILS

None of the teachers had ever formally assessed their pupils' ability with number, though four teachers felt they could rate pupils accurately on numeracy. All teachers remarked on pupils' lack of number understanding and their failure to link counting to quantities in any meaningful way. For example, one teacher reported "The concept of number itself: they cannot understand it, they can count, but they can't link it to quantities". In discussing children's errors, another teacher said "Well, their rote counting is O.K., but they can't transfer it to objects. It's the rhythm for counting, the one for one, they don't seem to be physically able to get this. They can be asked to fetch five and yet they may see that it's not five. They don't connect the counting and the quantity".

When asked about the relative difficulty of number in comparison to other areas of the curriculum, two teachers felt that the children lagged behind in numeracy; one suggested that there was little difference, another, that it was impossible to compare and another teacher remarked, "My expectations for number are very limited".

GENERAL VIEWS ON NUMBER

Teachers felt that number was very important, particularly from a functional standpoint; "Well, to be able to carry out everyday tasks in leisure activities, shopping, dealing with money etc. simple number is very important and may be more important than literacy". "It is the same as for anybody else, to recognise the number on a bus, you have to have the knowledge, telephones, houses, you know; to know the difference, for example, going shopping".

Two teachers mentioned games as a possible approach to helping pupils. "If we had a lot more games, we could cut down on the formality of the teaching approach, it is too formal at present". One teacher felt that number must be made more meaningful and another that, insistence on accuracy would be beneficial.

DISCUSSION

One of the most striking aspects to emerge from these interviews, is the unanimity of teachers' responses to all the questions put to them. Although only a small sample of special school teachers gave their views, the common themes running through their responses make interesting reading.

LACK OF THEORETICAL BASIS

Of note is the strong suggestion of a lack of a theoretical basis in teachers' approach to number work. The teachers were restricted in their choice of teaching activities and there was little evidence of clearly outlined teaching goals, based on developmental or educational theory. Generally, teachers used small beads or objects and concentrated on rote counting activities, although one or two introduced the use of body movements to their teaching. For many, the teaching of number seems to be 'intuitive' and rather atheoretical. Clearly, teachers working in special schools are severely hampered by the lack of research into this topic, and by a dearth of materials and programmes designed specifically for the child with severe learning difficulties (Brown, 1973).

ASSESSMENT

Although teachers have an 'intuitive knowledge' of their pupils' abilities, it would seem that this is rarely quantified in any meaningful way. The lack of a simple ability measure is a hindrance here. This is of some concern, since teachers do not have an objective assessment of ability levels. Thus they are at a disadvantage in deciding upon suitable teaching objectives and in monitoring rates of progress.

It is encouraging that teachers seem very aware of the difficulties their pupils have, particularly with regard to one-one correspondence. Teachers also make a clear distinction between rote counting and the counting of objects (Fuson and Hall, 1983). A major challenge for special education is to help teachers link objective

assessment and their intuitive knowledge of their pupils in a meaningful way, so as to form a basis for effective teaching. It is also encouraging that the teaching of number is seen by teachers, as an important and relevant pursuit.

NUMBER AND THE DEVELOPMENT OF SOCIAL SKILLS

According to a recently reported survey (Carden and Robinson, 1985), the main aim of teachers working with mentally handicapped pupils is to foster independence. Teachers wish their pupils to be capable of 'practical', meaningful skills. It is not surprising then that in our interviews, teachers saw number very much in the context of independent living and the development of social and community skills. Thus it may not be the development of number skills per se, that teachers see as central, but rather the development of those areas associated with self-help and socialisation (De Souza and Bailey, 1981).

Simply concentrating on the teaching of number via social skills etc. may not be an entirely fruitful approach. There is the danger of confusing children by trying to cover too many aspects of number at the one time. For example, teaching number through shopping or other social activities may be potentially confusing for those children who have not yet come to grips with the number words or basic quantification. Indeed, many teaching programmes involving 'social number' (money, time etc.) may fail, precisely because pupils lack awareness of basic numerical skills (Thurlow and Turnure 1977).

CONCLUSION

In conclusion, this small-scale survey has been useful in highlighting the needs for a greater level of support for teachers in this important aspect of the curriculum. The study also points to a lack of a theoretical base for the teaching of number skills and the sparsity of assessment and teaching materials; similiar findings were reported by Brown (1973), over fifteen years ago!! The results would suggest, that an important aim of teacher training should be, to make teachers aware of the possibilities involved in teaching number to pupils with moderate mental handicap. Obviously, one cannot generalise too fully from the small number of teachers interviewed. Also, the survey is limited by the fact that the teachers, though from different schools, come from schools in the same geographical areas. However, an opportunity of talking to teachers about aspects of the curriculum should never be lost, since their experiences and opinions are vital to the process of healthy educational debate and ultimately, curricular change.

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