

SCHOOLS IN SOUTHAMPTON - Cecilio Mar Molinero

Southampton has two primary schools for children with moderate learning difficulties (MLD). I learned about the management problems that they faced through my contacts in their governing bodies. There were two sources of concern; one of them related to efficient use of resources; the other one to rolls. The first issue was a straightforward routing problem: given that MLD children have to be collected by school bus and taken to school, what is the optimal way of doing it? The second problem requires some explanation: in 1981 there was a new Education Act that introduced new procedures to be followed before a child could be sent to a special school, there was also a new policy of integration of children with special needs in mainstream schools, and there had been a fall in the birth rate. Given that the roll of one of the special schools, Netley Court, had fallen could the cause of the fall be traced?, what should one expect from the future?

The first problem was a standard one and was "solved" in a standard way although by the time the report was written the solution had become outdated by a change in the management structure of the LEA, which had become a more hierarchical system with more decisions were being made at the County level rather than the city level. The analysis of rolls in MLD schools benefited from fortunate circumstances: I had the support of the Area office of the LEA, I had a good student who agreed to do her project on this subject, and I was able to use the just released 1981 Population Census. To approach the issue of rolls we divided Southampton into areas of reasonable size, about the size of half an electoral ward, found out from the files of the LEA how many MLD children had addresses in each one of these divisions, and compared this number with the number of children of the same age in the area, as obtained from the Census. We discovered that the proportion of MLD children varied enormously and that there was association between the wealth of a zone and the proportion of children attending MLD schools. We produced forecasts based on Census numbers. These forecasts were for a fall in rolls.

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While this was going on the LEA proposed the closure of a middle school, St. Denys. I was asked, by a member of the schools subcommittee of the County Council, if I could say anything positive about the school age population in the catchment area of the school proposed for closure. The obvious thing to do was not to look at this school in isolation, but to look also at all middle schools in a geographically well defined part of the city, locate on a map all the middle schools in this part of the city, find from the Census how many children of the relevant age lived in each relevant Enumeration District (ED), and use Linear Programming to allocate children to schools. This exercise (using the distance walked to school by pupils, as the 'objective function' to be minimised) produced several surprises. There was nearly no difference between the model generated catchment areas and the current arrangements. When rolls were examined the situation varied from school to school; the number of children on roll in some schools exceeded the relevant population in the area

while the opposite was true of other schools. Whether a school was acting as a centre of attraction or not was obviously related to the social structure of the area concerned. Inner city schools were losing many children while middle class schools were operating near full capacity. The aggregate result was a net loss to the area of about 23%. (2)

It became clear that further progress in the understanding of the dynamics of school populations in Southampton would benefit from the availability of some social classification of primary school catchment areas. A study of deprivation in Southampton, at the ED level, was available from the City Council but this study was unsatisfactory in that it only looked at a limited number of variables, only one at a time, and only identified extreme cases. There was a need for something much more sophisticated. The way in which deprivation in Sheffield had been examined by Thunhurst (3), using Principal Components (PCA) to generate social maps, was much more appropriate for this situation. The maps generated by means of PCA can also be produced by means of Multidimensional Scaling (MDS), and this technique is supported by a comprehensive package, MDS(X), which contains programs that can be used to explore the reasons why particular points map the way they do. MDS proved to be a very productive technique (4). All the schools that had been closed down or were being considered for closure mapped on the left hand side of the MDS map. That region of the map was associated with high percentages of manual workers, unemployment, council housing, single parents, and high proportion of permanently sick. The "attractive" primary schools mapped towards the right of the MDS map, and the "unattractive" ones mapped towards the left.

Southampton's school structure is "pyramidal". A set of primary schools is allocated to a secondary school, and a set of secondary school schools to a sixth form college. A certain degree of parental choice exists but children who move to a secondary school from one of the "feeder" schools have priority over those who come from outside. The MDS maps made it possible to examine the allocation of primary to secondary schools from a social point of view. It was found that the pyramid had been structured in Southampton as if it had been intended to keep the different social groups apart. At one extreme the most deprived areas of the city, which contain a large racial minority population, had been allocated to an inner city secondary school while, at the other extreme, two single sex schools in Western Southampton grouped primary schools situated in middle class areas with high proportions of non-manual workers (5).

The LEA and local politicians were, of course, aware of the problems faced by the inner city school. Extra resources had been allocated to it. The LEA had decided not to staff this school using staff/pupil ratios, but according to curricular needs, although they recognised that covering the full curriculum was "difficult". This school was predicted, on the basis of rolls in feeder schools, to suffer a large fall in rolls during the coming few years, but a decision was made to keep it open. It was claimed that it was well supported by the local community, that the fall in rolls reflected changes in the inner city

towards more offices and business activities, and that its pupils went in impressive numbers to the local sixth form college. All these views were based on the wrong sort of data and were incorrect. The Census proved that the population of the area was increasing rather than decreasing and that only a small proportion of the children in the area used the school. An exhaustive survey of school leavers found that the proportion of pupils that stayed on after 16 was low, but that the wrong conclusions were arrived at because careers surveys ignored non-respondents and most of them were unemployed.

The secondary school the LEA decided to close in Western Southampton, Hampton Park, was perhaps the only one with a socially mixed catchment area. This school was not suffering from falling rolls but it was "small" and its pupils could be accommodated in the alternative nearest school without, it was expected, much difficulty. I became a member of the committee that looked into this school closure. We examined the long term forecasts produced by the LEA and found them to be well below the equivalent forecasts produced by the County Council for planning purposes, the model used by the planning department having been originally developed for educational planning. We looked at transfers at the end of primary education and found them to reinforce the patterns identified in primary schools. We looked at academic results and found enormous differences between the different schools (6).

Some patterns were now clearly appearing. As the fall in the birth rate had affected schools they had lost teachers because pupil/teacher ratios had been maintained. The decline in the number of children appeared to be class-related although the relationship was obscured by the presence of immigrants, who had a higher fertility rate, by new building programmes which produced houses for first time buyers, and by internal migration within the city. Thus schools in the areas where manual workers and the unemployed tended to concentrate had had to cope with falling rolls and falling staff provision to a higher extent than the areas where non-manual workers live. This would have been enough to make some schools more attractive than others, but educational considerations are also relevant.

The importance of parental background in education is beyond dispute, it is not by coincidence that MLD children concentrate in poorer areas. It can be conjectured that children with remedial problems (the 20% in need of special attention as suggested by Warnock) concentrate in the same schools. The consequence is that schools situated in middle class areas develop a reputation for "good" results and become a source of attraction. Some schools are full to the limit of their capacity while others suffer from falling rolls and falling resources. I could not obtain any information about the social background of the children who choose not to go to their local school, and how this compares with the social background of the children who stay behind, but it can be conjectured that the exercise of parental choice accentuates differences. Staffing rules based on constant pupil/teacher ratios ensure that teachers are removed from where they are most needed. This amounts to institutional discrimination against the poor (5).

The LEA proposed the closure of Netley Court, my original primary special school. The LEA put the case for the closure of Netley Court as necessary because integration would make special schools redundant and because of the fall in the birth rate. Neither claim was supported by the facts. Despite my original forecast, for a fall in rolls, numbers in MLD schools had remained constant during a period of a fairly large decline in the relevant population. This indicated that need had been increasing and that the policy of integrating MLD children in mainstream schools had not been a success. This did not come as a surprise. Integration in under-resourced schools that were already finding it difficult to cope with "normal" children is integration under the worst possible conditions. The claim about the birth rate did not stand close examination; the number of 6 year olds in Southampton being 20% higher than the number of 9 year olds. By now many of us had learned a lot about education statistics, education policy, and campaigning for a school. Netley Court was not closed down although the LEA never accepted that their facts were wrong.

The LEA is now proposing the closure of a sixth form college. The statistical model that has been used to forecast rolls is inappropriate, being based on constant staying on rates. The data used to forecast rolls is two years out of date, new information running counter the assumptions in the model. There is also an attempt to close a primary school. After years of neglect it is being claimed that it would be too expensive to repair if it deteriorated further. It is, again, a school situated in a working class district.

The fall in the birth rate could have been used to give an advantage, through policy, to those children who had been disadvantaged by birth. This was not done. Cost took priority over quality. Hampshire is proud to have achieved important savings in the education budget. Can anyone predict what will be the consequences of the increase in the school age population that is taking place now?

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- (2) F.C. Poon (1984) An application of the transportation algorithm to the school allocation problem. Unpublished undergraduate dissertation. Department of Accounting and Management Science. University of Southampton.
- (3) C. Thunhurst (1985) The analysis of small area statistics and the planning for health. The Statistician. Vol 34, pp 93-108.
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