



The determinants and influence of size on residential settings for children

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Abstract

This paper examines why residential institutions are the size they are and summarizes research findings on the influence of size on child outcomes and organizational processes. The literature review shows that economic and ideological factors have historically determined the size of residential institutions. More recently, intellectual factors have provided justification for smaller unit size. The research evidence fails – with one exception – to show any correlation between the size of establishment and placement outputs or child outcomes, but seems to support the potential benefits of small units to the experience of students and staff. However, the extent of any effect depends on the context in which the groups operate. A model that considers the size in the context of institutional aims and structures is proposed as a more fruitful approach to understanding the significance of size in service development.

Key words: residential placements, placement size, residential education

Introduction

The high costs of residential care, and the growing interest in residence in certain sectors such as the American residential education system, has prompted discussion among policy makers and practitioners on the appropriate use and size of residential establishments. This is one of two papers written to inform this debate. The first (Little, Chipenda-Dansokho & Thomas, unpublished) examines the likely number and characteristics of children in residential care in five sectors and provides an alternative framework for classifying residential placements. This article intends to inform the discussion by examining why residential institutions, in particular residential schools, are the size they are. Based on a review of research and practice, it also intends to distill important lessons or guidelines for institutions concerned about their size.

To explore these issues, the researchers reviewed key texts on residential care and consulted with experts in a number of countries including England, Germany, Israel, the Netherlands, Spain, and the United States to identify studies that examined the issue of size. The researchers then conducted a standard literature search on the effects of the size of residential establishments on child outcomes in a number of sectors including education, child welfare, youth justice, and physical and mental health. The researchers further explored these issues by consulting with principals and staff from a number of residential schools in England, as well as one in Australia and one in the United States. Finally, the evidence was assembled and reviewed by a group of practitioners and scholars with expertise in the fields of education, psychology, social policy, and history.¹

The paper starts with a discussion of the historical determinants of institutional size. It then summarizes the major findings from the research on the influence of the size of residential institutions on child outcomes. It also highlights major findings on the effects of size on the structure and operation of residential institutions. The paper ends with suggestions about factors to keep in mind when making decisions about institutional size.

Historical determinants of size

Scholars find that economic, ideological, and intellectual factors, rather than considerations about optimal child development have historically been the main determinants of the size of residential settings (Parker, 1988).

Economic considerations have resulted in the creation of both large and small institutions. On the one hand, public or semi-public agencies with access to funding and serving relatively large populations have tended to view large facilities, often built on inexpensive land and outside of urban centers, as the most cost effective way of using scarce resources. In contrast, many not-for-profit or voluntary initiatives operating with limited resources have tended to establish smaller facilities and to focus on special populations, often those neglected by the public sector. Many of the smaller not-for-profit initiatives could not be sustained over the long term and were taken over by larger organizations targeting broader client populations. Not until the middle of the twentieth century did policy makers and program directors begin to become concerned about institutional size. The focus followed concerns about the quality of care for children, the different needs of boys and girls, the plight of infants, and the poor living conditions in some of the large facilities. However, this concern was not long lived and, in England for example, the interest in size declined once residential nurseries, which had been highly criticized for their neglect of children, were abolished in the 1970s.

Ideological factors have also influenced the size of establishments. In nineteenth-century England for example, large institutions (such as ones with large chapels) were created to support certain ideological causes, often with the goal of recruitment or conversion. Also, tensions between religious sects sometimes led to efforts to increase visibility through the construction of large buildings or attempts to socialize children into specific ways of thinking or behaving. As religious or national ethos and ethnic homogeneity has declined in countries such as England, Hungary, and Israel, so has the size of living groups for children (Kashti & Arieli, 1986; Kashti, 1998). The goal of the placement and theories about the amount of care needed by children in different settings have also been a strong determinant of the size of the institutions and the sub-units within them (Tizard et al., 1975), and within sectors there is a reasonable amount of consistency in the size of facilities. In the United States and England for example, youth correction facilities, hospitals, and residential educational facilities tend to be larger than those caring for children with special educational, behavioral, or psychological needs.

These historical trends are strong, and organizations – once established – tend to maintain their relative size. For example, in a study of 150 boarding schools in England ranging in size from 60 to 1,400 students, Lambert, Millham and Bullock (1975) found no examples of plans to radically alter a school's size and staff, and pupils were relatively unconcerned by the issue. Institutions may make some adjustments in response to changes in funding or ideology, but these changes tend to be minor or incremental, and the relative size of institutions across sectors (e.g., prisons compared to boarding schools, and mental health facilities compared to child welfare placements) has remained fairly consistent.

More recently, two schools of thought (one philosophical and the other psychological), have produced an intellectual justification for the current trend toward smaller living groups. The philosophical influence is the growing strength of individualism in Western societies and a move away from collective socialization and group indoctrination. This is manifest in an increasing sensitivity to the needs of individual children, the categories of need used to fashion plans for them, and the obligation to try to meet needs effectively. It is also apparent in changing societal goals for 'needy' children. For example, children's services at one time were focused on encouraging religious belief or preparing for military or domestic work. Today, concerns revolve around providing safety, allowing self-expression, encouraging family links, and improving social adjustment.

The psychological justification has been fueled by evidence accumulated since the Second World War on the negative effects of separation of children from their birth families.² Of all the factors discussed so far, this has arguably had the greatest impact on views about the size of living groups and residential placements for younger children. This subject is complex and deserves a summary in its own right and will not be fully explored here, but on the whole, research points to the potentially damaging effects of extended separation from families on children, which diminish with age (Rutter, 1981).

Research findings on the impact of the size of residential establishments

With this understanding of the historical determinants of size, what do we know from research about the impact of the size of residential institutions on child outcomes and organizational structure and operations? Research and practice make it clear that the size of an institution is one of many interacting factors – including the quality of care, children's characteristics at intake, staff training, and pedagogical practices – that influence the experience of staff and students. The only way to isolate the effects of size is through experimental studies in which children and staff are randomly assigned to different-sized groups, or through studies using a control or comparison group and rigorous procedure. For these reasons, this review focuses primarily on controlled or experimental studies in residential institutions for children.

As mentioned in the introduction, this paper looks across five sectors of residential care, with a particular interest in residential education whose major goals are the provision of care or accommodation and education. While this represents a broad range of institutions in terms of the needs and characteristics of children served, the service or treatment goals and options, the length of stay, and the nature of the relationship with family, the review does not try to take into account the specific features of institutions but rather try to identify those lessons that seem to hold across sectors and across institutions.

Residential care

Because practical constraints make it difficult to create both large and small establishments, and randomly assign children and staff to them, there are only a small number of controlled studies in the area of residential care. The controlled trials that have been undertaken focus primarily on the effects of varying regimes in different sectors of residential care (Clarke & Cornish, 1972). The only study in which the effect of size was the central question is the Brooklands experiment in England where two groups of 16 mentally disabled children were followed out for two years. Children in the control group remained in a hospital ward of 40

beds and a staff/child ratio of 1:3. Children in the study group were moved from the hospital ward to small hostels, each accommodating 16 children and staffed by seven people. At the end of the 2 years, the study found that children in the hostels showed greater progress than the children in the hospital ward. Their language improved, they became less maladjusted, and were able to play and relate better to other residents and adults (Tizard, 1964). But because there was no observational data collected on the nature and quality of interactions in each of the two settings, it was difficult to attribute these effects to changes in institutional size rather than to differences in teaching styles. In fact, researchers believed that changes in management (e.g., the creation of a child-centered rather than a management-centered environment) were as important as changes in size.

There are also a small number of comparative studies that look at placement outputs and outcomes (such as behavioral changes) for children placed in residential settings of different sizes. Collectively, these studies, conducted in Germany (Planungsgruppe Petra, 1988), Israel (Kashti, 1998), and England (Kushlick 1972, 1974; Lambert, et al., 1975; Millham, Bullock, & Cherrett, 1975; Tizard, B., 1975; Tizard, J., 1975), cover a range of institutions, such as boarding schools (ranging in size from 50 to 1,500 places), training schools for young offenders (ranging from 20 to 100 places), and homes for children with special needs (ranging from 5 to 20 places). The studies reviewed found no correlation between size and any aspect of children's behavior, development, or achievement once other factors, such as the quality of staff and school climate, were taken into account. Here again researchers emphasize the importance of the formal structure and operations of establishments, and the quality of adult-child relations for child development and the progress of individual children as will be discussed later.

We found only one study that questions these results. In a study of 48 residential homes (ranging in size from 4 to 20 places) for adolescents in the child welfare system in England, Sinclair and Gibbs (1998) focused on three outputs or outcomes: the quality of the social environment of the home, levels of individual misery (or the children's level of contentment), and the children's social adjustment. They found that homes were more likely to do well on all three measures if they were small. This effect was reinforced if the heads of the home felt that their roles were clear and compatible with those of other staff members, if they were not disturbed by re-organization, and if they had autonomy. It also helped if staff agreed on how the home should be run.

It is clearly difficult to disassociate the effects of the size of residential institutions from other relevant factors. Regardless, there has been an understandable desire on the part of policy makers for numbers that can be used as rules of thumb when planning or developing interventions. Kushlick's work in the 1960s, partly undertaken in residential placements for children with learning difficulties, showed that living groups operate most effectively when they consist of six to eight people. He found that children who were organized in groups of two or three were less autonomous and creative than children operating in groups of seven, and that a unit of 20 children requires processes and procedures that detract staff from their caring or educational objectives.

Management theorists interested in optimizing group dynamics have drawn on these findings to rationalize the size of units for children with special needs. For example, McCullough and Ely (1975) recommended seven as the optimal number. Institutions across the board have created smaller, more family-like environments within larger settings in an effort to meet the needs of their children more effectively. Various called 'cottages,' 'living units,' or 'family-group homes,' the tendency has been to establish units of 6 to 12 children supported by consistent caregivers in a family-like environment. However, Barbara Tizard's (1975) work on residential nurseries urged caution before accepting such guidelines. She found that residential nurseries with two staff (a nurse and an assistant) to eight children produced less stimulation

and staff-child interaction than those with one nurse to six children. This is because of differences in staff dynamics in the two models and the loss of individual autonomy in having to negotiate roles and responses when working in pairs.

School and Classroom size

There is a growing body of work on the effect of school and classroom size on outcomes and outputs in nonresidential institutions, and although education only represents one domain of the residential education experience (the others being 'home' and 'peer groups'), some general lessons can be drawn. In the U.S. in particular, considerable attention has been given in the past four decades to the issue of school and classroom size and its effect both on organizational inputs, such as funding, and outputs and outcomes, such as student achievement, school climate, and instructional leadership (Howley, 1994, 2001). The cumulative results are difficult to interpret because the research is fragmented and studies often use different measures. Looking at a single dimension for example, output measures include cognitive scores, creativity, changes in behavior problems, retention, and levels of participation in school activities. Analysis and interpretation are further complicated by the fact that the size of residential institutions varies widely, and there is no clear agreement regarding what constitutes a small or a large institution. For example, in the U. S. literature on nonresidential (or day) schools, 'small institutions' range from 200 to 1,000 students, and 'large institutions' range from 300 to 5,000 students (Cotton, 1996). Finally, despite the fact that most studies only measure cognitive skills, to date insufficient attention has been given to the range and interplay of cognitive and non-cognitive skills that contribute to positive child development and ensure success in adulthood (Heckman, 2000).

As in the area of residential care, there are few controlled studies focused on the effects of school size on child outcomes. There is the seminal work undertaken by Rutter, Maughan, Mortimore, and Ouston (1979) in 12 London secondary schools with a total of 3,485 (1,487 cohort and 1,998 comparison) students between the ages of 11 and 18 years. In this study, researchers found that the size of a school (ranging from 400 to 2,000 students) does not correlate with outputs or outcomes such as attendance, behavior, academic progress, and delinquency, once other factors, particularly socioeconomic status and the ability of children at intake, are taken into consideration.

In the U.S. literature, Howley (1994, 2001) found that socially disadvantaged students do better in small rather than large secondary schools. Howley also noted that several structural features affect school performance, including the number of grades in a school building, the location of the school, and the curricular focus (comprehensive education versus special focus). Similarly, Friedkin and Necochea (1988) found that students from higher social classes do better in large schools, although the improvement was less marked than for the disadvantaged groups attending small schools.

Although the overall size of institutions produces no distinct effects on child outcomes, the way an institution is divided up may affect the experience of residents and staff. The largest body of research on unit size comes from studies of class size but again, the international literature on this issue is not conclusive. Although more extensive, the American research base only offers tentative suggestions for policy and practice.

A few studies have examined changes in class size introduced under controlled conditions (Finn & Achilles, 1990; Prais, 1996; Shapson, Wright, Eason, & Fitzgerald, 1980), thus controlling for differences in children's background and socioeconomic status. Most notable in the U.S. is the Tennessee Student Teacher Achievement Ratio (STAR) where 11,600 kindergar-

ten students in 80 schools were randomly assigned to one of three classroom types: small classes with 13 to 17 children and one teacher; regular classes with 22 to 25 students and one teacher; and regular aide classes with 22 to 25 students, a teacher and a full-time teacher's aide. Data were collected on the students through ninth grade. Researchers found that students in small classes tended to score higher on standardized tests than students in the other classroom types, and that the highest gains in achievement (in language, arts, reading, and mathematics) occur at the end of the first year of schooling (Hanusek, 1999).

A study by Iacovou (2002) examined the effects of class size by reanalyzing data from a national cohort of children in Britain.³ She concluded that once all other influential variables had been eliminated from the analysis, reducing class size for children (aged 5 to 8) years from 30 to 22 produced a 10-percent improvement in their reading age. There were, however, problems in interpreting the evidence. For example, although the same teaching methods may have been used in all the classes, other factors such as the teaching group (e.g., the children's backgrounds and skills) might have varied.

Bennett (1998, p. 802), in a major research review of British and North American studies, concludes that 'class size is but one contextual factor, alongside other factors such as location (generally presented as urban versus rural), characteristics of the children at intake, curriculum policy, school organization that interact with teacher and pupil characteristics to mediate classroom processes and, through them, educational outcomes.'

The evidence suggests that in a good school, with well-trained staff and a supportive environment, smaller classes may improve educational achievement, particularly in the early years of schooling. However, reducing class size may have little effect if there are no changes in pedagogical practices. From the evidence presented, it is also possible to hypothesize that the size of residential settings for children might decrease with (a) the age of children served; and (b) the children's special needs (socioeconomic, educational, behavioral, psychological). The results however, are not authoritative and do not give a clear indication of the degree and duration of change.

Researchers and policy makers currently refer to the following numbers regarding effective school size: 300-400 students for elementary schools, and 400-800 students for secondary schools, respectively (Cotton, 1996). These numbers should not be treated as absolute and are not the product of carefully controlled research. They are, nonetheless, frequently referred to in policy statements.

The debate about school and classroom size has taken place alongside discussions about funding because reducing classes to a maximum of 20 students would require a massive recruitment of new teachers. It would also require retraining existing teachers as changes in classroom size do not in and of themselves lead to improved teaching practices. Indeed, Millham and his colleagues (1975) reported that poor quality and unimaginative curricula could negate any gains produced by the introduction of smaller classes. Nevertheless, there is a growing consensus among practitioners that units no greater than 20 should be an objective in Western nations, especially for younger children.

The effects of size on organizational structure and operation

Although there is no conclusive evidence that big settings are more or less successful than smaller ones in terms of child development outcomes, size does have clear implications for culture and climate, organizational structure, and operations. Studies of large-size settings for different types of children have noted the potential for resistance to change, an undue focus on structural and operational issues, and insularity from outside pressures.

Staff resistance to change and program development. Lambert and colleagues (1975) looked at boarding schools and found that the principals or directors of small private schools with broad goals tended to have more fluid roles and to be involved in a broader range of activities, including the pastoral care of students and staff leadership. In these conditions, it was easier for principals to introduce radical changes and to achieve stronger consensus among staff about the school's aims and methods. In comparison, they found that there was more resistance to change in larger schools with a narrowly defined child-centered ethos, and where staff roles tended to be more specialized.

Undue focus on structure and operation. Studies on the strengths and weaknesses of organizations of various sizes (Kushlick, 1972, 1974; Moos, 1968; 1974; Moos & Houts, 1968) show that although large institutions are no more successful in terms of child development outcomes, large size does produce its own problems of structure, operation, and communication. Some of the potential difficulties noted in these studies are an undue focus on questions of organization and administration, and a tendency to neglect emerging evidence about the changing needs of children (Brown, Bullock, Hobson, & Little, 1998).

Insularity from the realities of the local community. Smaller institutions with greater representation of the communities in which they are located have closer connections with the people and institutions therein. As such, larger schools may have lower levels of parental participation and be more isolated from the interests, realities, and concerns of the community (Cotton, 1996).

The literature also notes the potential strengths of large-size settings. For example, effective large-scale residential settings may, depending on their levels of funding, offer a richer curriculum, more extracurricular activities, greater flexibility in meeting the needs of children who do not thrive in one part of the setting, a greater variety of services to meet the varying needs of children, an ability to specialize and diversify within a single setting, and resources to improve understanding of the needs of the children placed and a willingness to experiment with new methods to meet those needs.

Conclusion

Most comparative studies in the area of residential education have failed to find a clear correlation between the size of establishment, placement outputs (i.e., the number of children who graduate) and child outcomes once other factors are taken into account. To our knowledge, only one study (Sinclair and Gibbs, 1998) challenges these findings.

Although size may not be important for outcomes, it clearly produces its own problems of structure and communication. The message from organizational theory is that size does not be-

come important until the organizational demands of the institution displace its primary functions, such as when welfare or education aims are displaced by a concern for process or administration.

Size is a tool in institutional management and has to be used intelligently to produce benefits. If the significance of size is considered for different types of residential institutions, some general conclusions emerge. For example, in Western countries, larger institutions may be able to draw on more resources, and offer a broader choice of activities and treatment opportunities. Large institutions can be especially effective if they are subdivided into smaller living groups and if there are good relationships between staff and residents.

On the other hand, if the aims of the establishment are measured by performance, a certain size might be necessary to achieve the desired range of programs or certain cost efficiencies. Although large institutions may benefit from economies of scale, large size also has costs such as heavy administrative structures and an undue focus on process and bureaucracy. There is also frequent confusion between size and function. Large institutions may be difficult to run but can be stimulating for young people. Coleman and Hendry (1999) stress the benefits of a variety of experiences for children and adolescents (e.g., a well-defined supportive family structure, a bigger peer group, and broader opportunities for exploration).

Studies of the relationship between size and outcomes suggest that size is in itself less significant than the way an establishment is managed. Evidence about classroom size in the U. S. for example, shows that a reduction of class size to around 20 does help younger children, especially those from disadvantaged backgrounds, but only under conditions necessary for effective implementation. For example, teachers must know how to take advantage of the opportunities that small size offers.

In summary, the evidence considered suggests that the question set in the title of this paper is too general to be useful. A more fruitful approach may be to view size as a means to other ends. A three-stage approach might be more helpful to policy makers and practitioners in considering the size of an establishment. The first is to determine the aims of the residential institution. Are the aims to promote child development, to shelter, to treat behavior problems, to control, or to educate? The outcomes sought will naturally differ in particular historical periods (Parker 1988) but it is possible to chart them, whether in terms of societal expectations or what staff believe they can achieve for children (Brown et al., 1988; Dartington Social Research Unit, 1998).

The second stage is to decide what practices are known from research to promote these aims. Here, there is more information in some areas than others (Bullock, Millham, and Little, 1993, Department of Health, 1998). For example, there is more research on approaches to reducing anti-social behavior than on managing family contacts.

The third stage is to ask what organizational features (including processes and culture) facilitate these desired practices (Dartington Social Research Unit, 1999) and what structures and training need to be put in place to achieve them. Inevitably size will be one of these considerations. This approach has the advantage of moving away from seeking general effects of size, a perspective that has been found to be limited. It introduces size as an important variable at a particular stage of planning. Hopefully this will lead to better decisions about the organizational aspects of residential institutions and better outcomes for children. The strength of this approach is that it enables policy makers and practitioners to consider size as an important variable – not in its own right – but at a particular stage in planning.

Notes

1. The scholars who reviewed the paper during a two-day seminar are: Professor Roy Parker and Professor Roger Bullock from the Center for Social Policy, Warren House; Professor Barbara Tizard, Professor Emeritus, University of London; Dr. Ian Gibbs, University of York; Professor Ewan Anderson, Director of the Residential Forum, Caring for Children; John Rea Price, HM Inspector of Prisons; Dr. Isabel Crovoto, Forensic Psychologist; Michael Harvey, one-time Director of an Educational Priority Area.
2. At this time, large numbers of children in Western European cities were moved to safe rural havens, which in a few cases meant sailing to North America. This resulted in widespread interest in the effects of separation on child development and a focus on the creation of small family-like units for children in care. Although there can be little doubt that theories of separation and maternal deprivation have had a major impact on child care thinking in the second half of the twentieth century, their proponents were unlikely to have perceived family group living as a 'cure' for maternal deprivation as it could not remedy the child's fundamental deprivation of a mother figure who offered continuous care. The family focus was more a reaction against institutional practices rather than an attempt to provide expectations of a 'normal' family, such as permanence and stability of adults and children.
3. Iacovou used the British National Child Development Study cohort of 14,761 children born in Britain between March 3 and 9, 1958.

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