

Buildings for schools – a case study

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Abstract

In the U.K the Department for Education and Skills (DfES) is implementing major reforms in education. Not least of these innovations is the Building for Schools programme that aims to improve the learning environment for British school children. Refurbishment and rebuilding is already going ahead in many areas of the U.K. The British education system aims to produce environments where children not only achieve academically but ones that encourage co-operation, appropriate behaviour and discourages bullying. Also environments must be flexible and designed with the comfort of users as a primary concern. “Schools for the Future” DfES [1] challenge is to “provide attractive, imaginative and stimulating environments which are safe and secure places for children to learn in.” Coupled with this is a concern for cost-effectiveness and value for money. This paper assesses the effectiveness of one such refurbishment in a secondary school in Warwickshire and examines the extent to which it meets these criteria through in-depth interviews with the staff and children who use the school.

Keywords: children, schools, building and construction.

1. Introduction

The government proposals to improve the learning environment for school children in the U.K. recognises the need to provide environments that are appropriate to the needs of the user. It has long been established that there is a clear link between the school environment and behaviour, attitude to learning and educational outcomes, for example Clark [2], Earthman [3], Fisher [4] and Schneider [5]. The classroom is perhaps the most obvious site for appraisal when it comes to assessing the link between attitudes and environment, however for children and young people, school is not only the place where formal learning occurs, it is also the site where social skills and attitudes are acquired. Outside of the formal

setting of the classroom is where much of this more nebulous knowledge is gained.

As Higgins et al [6] and Burke and Grosvenor [7] have indicated lunchtime has particular significance for children, which is often ignored by school staff and designers of schools. This study will examine the effects that the refurbishment of the dining room in one secondary school had on the behaviour and attitudes of the students.

As well as the rebuilding programme for schools the refurbishment took place against the background of the implementation of the government’s Healthy Schools Initiative, which aims to give a whole school approach to health and healthy eating. This case study will also assess the

success of this school's attempt to introduce healthy eating as part of the school's overall approach.

2. Background to case study school.

The school selected for this case study was in a middle-sized town in Warwickshire, U.K. According to the most recent OFSTED report it is a "very good school" [8]. However the report also acknowledges that many aspects of the physical environment within the school were unsatisfactory. Children attending the school come from a wide range of socio-economic backgrounds, with attainment on entering the school being below the national average. It is smaller than the average secondary school, having 770 students currently enrolled on the school register.

The OFSTED report also commented on the exemplary management of the school, comprising a forward thinking head and supportive senior management team. This contributed to the open approach to the design of the refurbishment and the willingness to allow the meaningful contribution to decision making undertaken by the children in the school. This will be discussed in greater depth in the results section.

The school was selected for this case study due to an extensive refurbishment of the dining room that was undertaken during 2005.

3. Aims

The aims were to establish the success of the refurbishment of the refectory in terms defined by the DFES. The school environment should be attractive, imaginative and stimulating as well as safe and secure, encouraging appropriate behaviour whilst providing value for money. This case study aimed to establish how far these aims were met and how far the needs of the users of the space were accounted for.

Secondly it was felt that this was an opportunity to provide an alternative approach to the assessment of refurbishments through the utilisation of in-depth qualitative approaches and methods.

4. Methods

The research methods used were qualitative, utilising in-depth interviews and participant observation to assess the effectiveness of the space and its appropriateness to purpose. These methods were chosen to provide a rich insight into the various ways in which this place was perceived and experienced by all users and whether their needs had been adequately accounted for during the design and build. It has been expressed by various researchers who work with children that quantitative tools such as questionnaires are inappropriate for use with children because they do not provide children with sufficient opportunity to engage with the research process on their terms and in their words. Qualitative methods are those of choice when dealing with the perceptions, opinions and experiences of young people [9, 10, 11]. In recent years researchers in the field of ergonomics have also expressed an interest in the development of qualitative methods in order to provide depth as well as breadth in the discipline [12, 13.] This paper recognises the need for qualitative methodologies when conducting research with children and explores the opportunities for using such research within the field of ergonomics.

Semi-structured in-depth interviews were conducted with the director of finance, teaching staff, kitchen staff, and lunchtime supervisors. The interview schedule consisted of themes to be covered concerning behaviour, comfort, flexibility and cost effectiveness. Unstructured interviews were conducted with a group of children to establish their opinions on the new dining room. Mostly interviews were recorded on audiocassette and were transcribed verbatim. However some interviews could not be recorded due to background noise levels in the dining room where the interviews took place. For these detailed interview notes were taken at the time and subsequent details were added in immediately after the event so as to be as "fresh" as possible.

Participant observation was also undertaken over several lunchtimes in the dining hall in order to observe the children and staff "in situ". Extensive notes were taken to produce a rich descriptive account of activity in the dining room.

Transcribed interviews and observations were subsequently coded. The coding was derived from the DFES criteria for good buildings i.e.

behaviour, comfort, attractiveness and cost effectiveness. The coding and arising subcategories have been explored in the results section.

5. Results

This section will take a thematic approach, discussing each dominant theme as it arose from the coding of the interviews and observations.

5.1. Flow of children through the dining hall

A key theme mentioned by all parties was the improvement in the flow of children through the dining hall. The director of finance explained that prior to the refurbishment although only around one quarter of the children used the dining hall there were long queues that lead to frustration of the children and the supervisory staff. An ergonomic solution to the problem was found by examining the flow of children through the dining hall. One of the main problems was that the tills had originally been placed on the outside of the servery, taking up space that children needed to circulate around the hall. After the refurbishment the serving hatches had been extended to allow for the tills to be placed behind the hatches, thus freeing up more space in the hall itself. According to the kitchen staff relocating the tills also had the added benefit for them that they were no longer perceived by other members of staff, i.e. teachers, as supervisors of the children. Because they were no longer in the dining hall with the children their role as kitchen workers was more clearly defined. This in turn led to them feeling much less stressed and in the words of one of the kitchen staff less “taken for granted.”

The movement of children was also made easier by three further factors. Firstly the food had originally been served from one hatch, leading to the formation of one long queue, even if they only wanted to purchase something from the far end of the hatch. This was addressed by dividing the open hatch into three: one for hot meals, one for “fast food” and one for cold food. This enabled the children to decide what type of food they wanted and go straight to that particular hatch, thus cutting each queue down considerably. The fact that menus were printed and clearly displayed also helped the situation by giving children time to decide on their choice for lunch before they arrived at the food hatch. Secondly, before the refurbishment the

children had nowhere specifically to balance their trays whilst queuing at the serving hatches, meaning that they had to put their trays on the hatch and lean into the kitchen space. As one of the kitchen staff said “they were always in your face”. This led to a feeling of being crowded and tempers got frayed. The simple addition of rails where children could put their trays whilst waiting to be served freed up a great deal of space for the display of food and a greater sense of control for both the children and the serving staff.

Finally the children could quickly and easily exit the room, having taken their trays to the condiments unit where they could conveniently stack their dishes and clear their plates of rubbish. The implementation of a one-way system in the dining room meant that the children could stack dishes on the way out, leaving a clean and tidy area for the next person, hence helping the flow of children.

The speedier, but nevertheless unrushed, flow of children, led to less frustration on the part of the children and of the staff. This had the effect of a much calmer dining hall than previously.

5.2. Appropriate Behaviour

One of the key objectives of a school building is, according to the DfES to encourage appropriate behaviour. All interviewees agreed that there had been a dramatic improvement in the behaviour of children at lunchtime in the school since the refurbishment. This was partly due to the more ordered flow through the area, but there were many other factors that were considered of great importance to this improvement.

5.2.1. Furniture

Prior to the refurbishment the furniture in the dining hall had consisted of hexagonal, Formica-topped tables and plastic stackable chairs typical of those found in many secondary school classrooms. The new furniture consisted of much smarter circular tables with folding legs that could be easily wheeled in and out of the dining hall and fabric covered, padded, comfortable chairs. These were described by one member of the teaching staff as “plush”.

The design of the furniture, the easy folding legs and wheelable tables, and easily stackable chairs reduced the time needed to set out the tables for lunchtime. It was observed that

before lunch, after the furniture had been set out, that some children from an art lesson were using the tables to set out and complete art work, showing to a degree the necessity for flexibility in school design. Spaces very often have to have multiple purposes. The design and technology teacher explained that the dining hall was ideal to be used as an extension to the art rooms as they were actually too small for their purpose. She elaborated by saying that the school built at the turn of the twentieth century. The dining hall was obviously fulfilling, at least in part, the need for flexibility, although the kitchen staff found it somewhat inconvenient to have children in the hall immediately prior to lunchtime.

Both the children and the adults interviewed agreed that by providing what one child described as “proper” furniture, the children showed a respect for their surroundings that they would not have shown towards a less well designed one.

As well as the improved chairs and tables, along the back of the room were two long wooden bars and high bar stools. The director of finance explained that he had originally met opposition to this idea from teaching staff on grounds of health and safety. Some of the staff had expressed concern that because the stools were higher than the chairs the children might swing on them or kick them away from beneath other children. However he and the senior members of staff decided to take the view that if the school treats the children respectfully they in turn will respect the school’s property. This is a theme that will be returned to.

Staff and children agreed that the furniture provided the space with an atmosphere more like a restaurant than a school refectory, thus they behaved accordingly, respecting each other as well as their surroundings. As one senior staff member said, “You wouldn’t believe those chairs have been there since September would you?” indicating that the initial scepticism expressed by some of the staff was confounded by the positive behaviour and attitudes of the children.

The lunchtime supervisor said that the circular tables also enabled groups of children to converse more sensibly, without shouting, thus adding to the calm atmosphere.

A feature often seen in school dining halls is the moulded tray, upon which food is directly placed, with no plates. Along with the new large furniture, china plates were now provided for the

serving of meals. One boy interviewed said that this was a specific request of many of the children. He said that the old trays were horrible “for babies” and that the china plates were much more pleasant to eat from “they’re more sort of grown up.” The children were being treated as responsible young adults and responded as such.

5.2.2. Healthy eating

It has been established by, amongst others, Harvey [14] that there is a link between healthy eating and behaviour. This was reiterated by the staff, several of whom stated that they had seen a change in behaviour and attitude since the push to healthy diets in the school restaurant. The financial director at the school stressed the emphasis given to the healthy eating initiative of the government, at the same time lamenting the lack of resources available to schools to implement the scheme. (All schools have been allocated £1800 which this school had chosen to use to investigate healthy vending machines.) The refurbishment was conducted in the light of a general move to emphasise the importance of health within the school. The chef (who was unavailable for interview) had been involved at the outset to ensure that, along with the refurbishment of the environment, the food available to the children would also be enlivened, making it both more attractive and healthy. To avoid conflict with children over what was referred to as the “chip issue” a member of the kitchen staff explained that rather than a sudden banning of chips from the menu they were being gradually phased out, and over the course of five months the consumption of chips had fallen so that out of approximately 300 meals served per day, only 10% would be chips.

The change to a more balanced diet on the school menu directly involved the children through The Food Action Group. Interviews with these children revealed that they had approached the issue of healthy eating as a problem that needed to be researched. They organised questionnaires to ascertain from their peers what was wanted from the menu. The results were then fed back to the steering group of the school and used to formulate a menu. The Healthy Schools Initiative stresses the need for children to be directly involved with healthy eating and for a whole school approach to be adopted. Certainly this school took its duty to provide healthy food and to involve children with that provision very seriously.

The success of the initiative may be partially measured by the fact that, according to the financial director, before the refurbishment took place only around 25% of the children opted to buy school meals. Since the refurbishment over 50% regularly have school meals, and on occasion this has risen to two thirds.

5.2.3. Staff

The assistant head raised the point that because of the raised standards in the refurbishment and the food served in the refectory many of the staff now chose to eat food from the restaurant, often sitting with groups of children. This she felt had a positive effect on the behaviour of the children in two ways. Firstly, by their presence, the children were obviously being monitored by the staff. Secondly, because the staff were using the restaurant it was felt by the children that "If it's good enough for them it must be good enough for me", thus the cycle of respect felt for the place was strengthened.

The assistant head also now insisted that staff on duty got to the dining hall promptly and remained there. Staff on duty stood just outside the refectory and let the children in a small number at a time. This led to the children waiting calmly outside in the corridor rather than all rushing in at once. This system had always been in place theoretically, but since the refurbishment the senior staff had insisted on it being adhered to strictly. However at several points it was observed that when the member of staff was not immediately present, having been called away to deal with another issue, the children still stayed in an orderly line and went into the dining hall a few at a time. It was obvious that although the staff presence was a contributory factor to the exemplary behaviour of the children, it was not the sole factor.

5.2.4. Children's ownership of the space.

All staff interviewed emphasised the importance of the involvement of children throughout the whole design process. The children had produced designs to express how they envisioned the aesthetics of the space and what they envisioned in practical terms. The financial director said

"The idea is that students see that as their area. They don't see it as 'This is imposed by the school... we thought about this, we looked at it and

then the school did it. This belongs to us rather than belonging to the adults.' And it works."

This, both staff and children felt, was key to the success of the refurbishment. The technology teacher who had been involved in helping the children develop their designs said that by involving the children in the whole process it ensured that they felt it was their place, something different and special. One of the children stated explicitly "It's our place. More ours than the teachers." The sense of ownership gained by the children ensured a positive attitude, reflected through polite and otherwise appropriate behaviour. A member of the teaching staff explained that before the refurbishment, food fights had been a regular feature of lunchtimes. Since the work had taken place not one food fight had occurred. The children had been treated respectfully and responded in kind.

The sense of ownership was further enhanced by choices made over other aspects of the design. For example the wall colour, previously a dark mustard yellow was now a cool green. This had been decided through research conducted as part of a design and technology project.

The addition of wall lights to provide atmospheric lighting had been a fundamental part of the design, one that the children interviewed found appealing. One boy said it was the best part of the room as it made it feel like a real restaurant.

Artwork by the children was also displayed that some of the children drew attention to, stating that it too added to the pleasant "bistro" atmosphere.

5.3. Cost

The entire cost of the refurbishment was £36,000. This was felt by the director of finance to be good value for money. This was especially so in the light of the fact that so many children were now opting to eat school lunches.

Given the vast improvement in behaviour and attitudes of the children, as perceived by the staff, the refurbishment was believed to represent excellent value for money.

The cost of the school meals themselves varied from 80p for some meals, for example chicken fajitas or lasagne. Full roast meals cost £1.50, which both children and staff felt represented excellent value for money.

6. Conclusion

Clearly, using the criteria set by the DfES, the refurbishment of the dining hall can be judged to be a success.

All users of the space found it to be attractive, with an atmosphere more like a restaurant or bistro than a school canteen.

The new design also ensured that the users of the space found it centred around their needs, shortening queues, enabling a better flow of students and making the facilities much more accessible and usable.

The full involvement of students in the design process ensured an interest in the refurbishment and a real sense of ownership.

The cost of £36000 was considered by the Director of finance good value for money, as were the items on the new healthier menu.

These factors lead to a rapid and dramatic improvement in behaviour amongst the students, who treated the facility, staff and each other with a newfound respect.

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