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### Getting together to improve the school environment: user consultation, participatory design and student voice

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#### Abstract

This article first investigates historical trends in both the practice and the understanding of consultation, considering the often contrasting perspectives of architects and designers, compared to teachers and educationalists. Differing assumptions held by these two broad groups of professionals can lead to conflicting aims and objectives for school buildings, even where there is determination to communicate effectively and find common ground. Our exploration of this issue will centre on the potential contribution of users of the educational environment and, in particular, what happens to the student perspective. Consultation over school buildings has tended in the past to centre on educators, and so miss out direct involvement of students (Woolner et al., 2005). However, there is increasing conviction that children should participate in decision-making (Burke and Grosvenor, 2003; Clark et al., 2003), including about school-design (DfES, 2002), and methods are being developed to do this (Wall and Higgins, 2006). The historical analysis will bring us to a point where, using the example of one school, the consultation procedure in practice can be reflected on. This will form the second element of the article, exploring consultation within the modern context of participatory school design and student voice. The experiences of a school undergoing redesign of a classroom space will be discussed in light of the dichotomy previously established, the perspective of architecture in contrast to that of education. The role of the child's view in influencing design solutions will be considered, together with the consequences for teaching and learning, consultation procedures and the re-design of school buildings.

**Keywords:** classroom, design process, learning environment, redesign, school architecture, school building

#### Introduction

Whenever schools are built or rebuilt, their design will be influenced by many factors: practical considerations, trends in public design and the availability of materials and techniques (Woolner et al., 2007). Underlying influences will include contemporary

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ideas about architecture and about education. Furthermore, it has frequently been observed (Bennett et al., 1980; Cooper, 1981; Maclure, 1985; Saint, 1987) that a vital aspect is the relationship between architecture and pedagogy that occurs at a particular time and which is developed by increased school building. An exploration of past experiences delivers significant implications for current building work, especially regarding the consultation and involvement of school users in building design.

Currently there is a widespread awareness of the importance of consulting users and of attempting to understand the educational use of a school. Architect Dudek argues that such understanding is vital, and, in a recent book, he provides a chapter entitled 'The educational curriculum and its implications', which he intends as 'an overview of the current educational debate, aimed at architects and designers who perhaps have little conception of the complexities surrounding the role of a classroom teacher' (2000: 41). Meanwhile in a recent interview (Curtis, 2003), the Head of Architecture at Hampshire County Council commented, 'It is crucial that we work with headteachers and governors who will then involve teachers and parents, and perhaps students' (p. 27). In the BSF Building Bulletin (DfES, 2002), a section on consultation advises that 'All potential users in the community should be consulted' (p. 63).

#### **Consultation of teachers**

Prior to the Second World War, school architecture – while representing values about education – was primarily an expression of religious, charitable or civic endeavour (Woolner et al., 2005), while post-war school architecture was affected by the changing social and political context (see Maclure, 1985; Saint, 1987 for detailed descriptions). However, although there was plenty of interest in fitting the form of schools to their function, the consultation of users as a tool to achieve this was not yet established. There were some attempts at evaluating schools after they were built but the record on this is mixed (Saint, 1987).

A much more determined consultation of educators can be seen to have developed by the time of the burst in primary school building which occurred during the 1960s and early 1970s. This was partly in response to the ideals of architects and others of the time (Otto, 1966), but the closer relationship of architecture and education had been given a boost by the restrictions on school building costs, which were imposed in the early 1950s. These gave school designers another reason to look more carefully at schools and examine how space is used, resulting in more clustered designs with less corridor space. The eventual enthusiasm for consulting educators is closely associated with the development of the range of school designs which were termed open plan. Discussions and arguments about that style, both contemporary and retrospective, are very revealing about the complexity of any attempt at consulting users, and, although the 1960s consultation centred on teachers, this has relevance for an investigation of the consultation of children.

The adoption of open plan as the norm produced problems which can be related to the method of consultation. The main one was that the schools were appropriate to the educational ideals of advisers and headteachers, rather than to the actual practice of most teachers. Furthermore, the failure to assess comprehensively how the new schools were being used meant that it was some years before independent studies began to investigate the responses of teachers and demonstrate some difficulties (Bennett et al., 1980; NUT (England), 1974). There is now a considerable body of research, from the UK and USA,

which examines how open-plan schools are actually used. A major conclusion is that the design does not determine the teacher's practice, with wide variations in how openplan space is used (Gump, 1975; McMillan, 1983; Rivlin and Rothenberg, 1976). Bennett et al. (1980) include a case study of a comparison of practice in two identically designed units, containing the same number of students, with dramatically different teaching styles and organization. They argue that 'expertise and philosophy of the staff are the central determinants, not the design of the building' (p. 222).

It is this mismatch of the pedagogical intentions of the architecture and the practice of the teachers that Cooper (1981) is most critical of. He argues that by systematically exaggerating the move towards 'progressive' educational practices, the educationalists who advised the architects misled them into believing that a particular style of teaching had become the norm and required appropriate buildings. More moderately, Maclure (1985) discusses the inevitable difficulties of trying to distinguish a genuine development in education from the activity of an adventurous few that will never catch on. As he points out, this was not helped by the tendency of architects to meet teachers and LEA advisors at the vanguard of educational practice (Pearson, 1975). Considering the open-plan schools that were built in this period, Medd (1984: 11) argues that many local education authorities built with a 'degree of irresponsibility – stemming from the urge to be up-to-date'.

It is perhaps unfair, however, to suggest that the only problem with the 1960s attempts at consultation was the overemphasis on consulting particular parties. Bennett et al. (1980) and McMillan (1983) suggest that even where schools were built as replacements, as many were in the 1960s and 1970s, and the staff could have been consulted, this did not always happen. Furthermore, these researchers express doubts whether consultation was really valued, or whether it amounted to 'pseudo-consultation' (NUT (England), 1974). Therefore a clear implication can be seen for any consultation in that just talking about and recommending the consultation of individual users does not guarantee that it will happen or be acted upon.

This can be linked to the problem of only consulting progressive enthusiasts, since it was by concentrating on these people that architects could hear ideas that concurred with their own about underlying requirements. Thus in the 1920s and 1930s, when most architects were agreed on the benefits of day-lighting and on the priority of this for school design, a teacher who preferred more subdued lighting would tend to be ignored. A minority of the respondents to the survey of Bennett et al. made the related point that individuals should not be consulted because they would only give their own narrow view, which might not concur with the needs of all the other, and future, users of the space. Concern about the conservatism of the majority of teachers is one reason why many post-war architects endeavoured to understand education by talking to those at the cutting edge, who, it was presumed, would be more able to predict future developments.

Yet the resulting relative lack of change to teaching practice demonstrates the failure of the cutting edge educators to see what the future held, and suggests that if one wants to see where society is heading, it is as useful to consult those holding it back as those pushing it forward. This should be remembered by those involved in any design enterprise that hopes to be consultative or participative and they should think more precisely about *who* they need to consult. Following the argument of Cooper (1981), it is also important to be clear about *why* an individual is being consulted, to what extent their

perspective is likely to be representative, and to avoid implying that the aspirations of a few are representative of the behaviour of many.

#### **Pupil consultation**

Pupil views and pupil voice are buzz words in education contexts and they are driving many initiatives and policies, as well as the process of school development and evaluation (Flutter and Rudduck, 2004). This movement for the student voice to be heard and recognized (for example, MacBeath et al., 2003; McIntyre et al., 2005) is underpinned by a philosophical shift within the wider community to listen to the views of children initiated by the UN Convention on the Rights of the Child (1989). Importantly, the Convention asks for the inclusion of children and young people to be involved in decision-making on structures and initiatives that concern them (Article 12). This, therefore, has added a further tension to the process of consultation associated with the current school building programmes: to what extent should the views of children and young people impact on decisions and how best are they consulted.

There is growing conviction in a number of quarters that the child's view on learning environments should be considered (Burke and Grosvenor, 2003; Clark et al., 2003; DfES, 2002). However, there are two main debates that surround pupil consultation, and these are very much consistent with arguments surrounding consultation more broadly. First, examination of the activities and associated processes and whether they are effective and have an impact, and second, there is critique of the dialogue surrounding the participation: to what extent is it cursory, purely managerial or 'box ticking' (Clark and Percy-Smith, 2006). Both of these elements have been somewhat expanded upon by the examination of teacher consultation above, but particularly important to the consultation of children, particularly very young ones, are the processes through which this consultation is completed.

One of the key deliberations surrounding this type of consultation is the extent to which children and young people have the competency to be effectively consulted (Hill, 2005) and whether they understand the world effectively enough to give a view which should be listened to (Wyness, 1999). It could be argued that the former could be particularly so in schools where power relationships between children and adults can be magnified. Methods are being developed to manage these aspects, within education research (e.g. Wall and Higgins, 2006) and design (Burke, 2005), but the extent to which pupil consultation is effective is variable (Middleton, 2006).

Having said this, pupil participation and consultation has become widely considered an important part of any innovation, including design and redesign of schools and classrooms. Indeed, specialists in children's environments, Rivlin and Wolfe are especially positive about the ideas and vision of younger users. They describe an occasion where they believe not involving pupils in a classroom innovation fatally undermined it (1985: 200). Therefore during the current wave of school building and the associated thinking about learning spaces which are associated, it is important to recognize the issues associated with consultation and participation of the children with regard to the methods employed and the extent to which it influences the design process and the end result.

#### Tensions of the design-consultation process

This brief review of experiences in school design and consultation shows the tensions inherent in the process. In design itself there are many competing goals, including the need to produce something that works in the context it is intended for, but could also be useful elsewhere; that is innovative, but which will be understood by current users. In the world of education, these initiatives rely on architects and designers who are not familiar with the functioning of this world, so it is not surprising if they see involving users as a solution to many of their problems.

Yet attempting consultation or inviting participation adds personalities and individual enthusiasms, which can make it still harder to balance tensions. Such difficulties were evident in the response to school architecture in the 1960s and could be expected to be relevant to any school design initiatives today. There is considerable potential, for example, for a desire for creative 'blue sky' thinking to overwhelm calls for a proper audit of what actually does or doesn't work in a building, or, in contrast, planning may be limited by short-term constraints of money and personnel or more broadly, a fear of trying to plan for a future we can't accurately predict. Planners are keen to find a middle way between being thoughtlessly conservative versus bandwagon jumping and empty trendiness, but there is a more fundamental problem in policy-level thinking: it is not clear whether new directions in teaching and learning should lead innovation in school design or whether innovative design will shape educational practice. There is an important tension also between the desire to consult to produce a space that is organically connected to the needs and aspirations of some actual users and the need to produce design ideas which can be used in a variety of contexts.

It is now appropriate to consider in detail a design innovation set in the context of current schooling. This provides the opportunity to investigate the design process as it progresses, rather than with the hindsight of decades. Also, since the approach was intended to involve students as well as teachers, it allows an examination of similarities and differences in the process or the outcomes which result from changing the emphasis in the consultation of school users. We can ask whether what happens to the child's view in the present bears any resemblance to what happened to the teacher's view in the past.

#### Case study school

The *Schools Renaissance* project was initiated as part of the Design Council's ongoing research (*Kit for Purpose*<sup>1</sup>). It is one of a series of initiatives developed, with support from the Department for Education and Skills (DfES), to refocus the learning resources market around the needs of users by addressing supply, demand and purchasing strategies. The project's objectives were to:

- Develop and disseminate effective practice in the design and procurement of learning environments, focusing on schools' internal environments and recurrent expenditure (i.e. furniture, materials and equipment).
- Develop and promote practical tools and a working methodology which help schools articulate what they want and how it might best be procured.
- Influence government policy over school design and appropriate resources and materials for learning.

Fundamental to this project was the belief that schools and classrooms had not changed significantly over the last 100 years (see Figure 1).



*Figure 1:* Images indicating the Design Council's perspective that classrooms over the last 100 years have similar characteristics (Design Council, 2005)

The *Schools Renaissance* evaluation, conducted by the Centre for Learning and Teaching at the University of Newcastle, considered the design innovations in three schools:

- Alder Grange Community and Technology School in Rawtenstall, Lancashire;
- Great Sankey High School and Engineering College in Warrington; and
- St Margaret's High School for Boys in Liverpool.

This case study examination will focus on the latter of these, St Margaret's High School for Boys, Liverpool. This case study exemplifies many of the practical issues with consultation which need to be considered when undertaking any school design project, whatever the scale.

#### School context

St Margaret's is a voluntary aided high school for boys, with a mixed sixth form, in Aigburth, Liverpool. It had 992 students aged between 11 and 18 on roll during the project. It is a popular school and the attainment of students is above the national average. Despite their successes, the focus for the staff at St Margaret's continues to be on raising boys' achievement and the involvement with *Schools Renaissance* was seen as an opportunity to motivate and encourage both staff and students. The vital element which the school identified as a potential catalyst for engaging students was the provision of a flexible and stimulating environment which could provide a variety of stimuli within a single lesson, as one teacher described:

The boys will tend to bounce around from one idea to the next, from one thing that catches their attention to the next.

From the beginning of the *Schools Renaissance* project the team at St Margaret's wanted the students to have a key role in the processes of design, prototyping and evaluation. Therefore, students were involved alongside staff in Design Council-led immersion days (for further information see Design Council, 2005) and took active roles in the different activities used to explore development possibilities for learning environments in their school.

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*Figure 2:* A photograph of the 360° classroom showing many of its key characteristics

#### The design innovation

The design innovation at St Margaret's was entitled by the project team a ' $360^{\circ}$  Classroom'. It had several key features (many of which are visible in Figure 2) which distinguished it from the 'more traditional' norms:

- the Qpod, an integrated desk-chair designed to be adjustable to the height of the student, with both the chair and desk being capable of alteration;
- technology 'heart', holding video, audio and projection equipment in a single unit which rotated to project on any of the walls or blinds;
- removable whiteboards at either end of the room, to facilitate collaborative group work these whiteboards fitted on top of four Qpods;
- innovative and versatile horizontal blinds which control the daylight and provide additional writing or projection surfaces; and
- 'race track', defined by a change in carpet colour encircling the room, it was intended for students to keep their Qpods inside this perimeter thus allowing teachers easy movement around the classroom.

The classroom was assembled during the summer holidays and autumn term in 2004. Once the classroom was constructed the process of trialling and embedding extended

throughout the school year. This prototyping process led to many unforeseen issues with the different agendas of the design team and the school often conflicting. Various aspects were removed for re-fitting or refining during this period and, therefore, use by the project team of teachers was variable – ranging from one lesson in the  $360^{\circ}$  class-room to 15 in the autumn term, for example.

#### The design process

Although the project ended up being about a 360° classroom, this was not the original focus.

Initially the school were interested in developing effective storage for the newly refurbished Geography Department. It had been hoped that it would enable the physical resources of the department to be readily available and therefore in more frequent use. However, during the immersion days, where students worked alongside teachers and the Design Council team, one student produced a drawing of a classroom which looked like an amphitheatre and the designers picked on this idea and developed it.

[They] produced some quite futuristic sketches of the classroom, not dissimilar to the interior of say a train or a commercial airliner, and then within the walls there were storage devices or cassettes that could be locked into the walls, that could be moved to other classrooms.

At some point after this, the focus moved away from storage and became about producing a 'classroom of the future' with the emphasis on flexibility of movement through 360°. This change was linked to the school's belief that the boys needed a more stimulating and changing learning environment than could be provided in a traditional classroom and the enthusiasm of the students towards the idea on the immersion days:

If there was something on one wall, that would keep their attention for so long and the next stage of the lesson would be another wall and so on. Now I don't suppose we wanted them spinning round like whirling dervishes but it would be something to keep their attention and move from one phase of the lesson to the next and enrich the learning experience.

This shift from a localized solution in geography, however, to a broader experiment in teaching and learning throughout the school led to the project being re-sited in a mobile classroom, a move that was to have significant implications both for the design process and the design implementation.

#### **Teachers' perspectives**

Staff were involved in the consultation and evaluation process at a fundamental level. However, because there was a change of focus for the project, moving from the Geography Department to a more school-wide focus on learning and teaching, the staff who had been involved in the original immersion days were, apart form members of the senior management team, different to those who actually used the 360° classroom. This could be seen to be a mistake and that the consistency of those involved in the project needs to be prioritized.

The staff who did take part in trialling and prototyping the 360° classroom did so as part of a committed attempt to try something innovative in their teaching and learning. As such, they devoted a significant amount of time to preparing and creatively thinking about how to use the classroom, which all were agreed had great potential:

I was able to be much more adventurous ... I could get them working in groups using other whiteboards in the room, writing things up ... There's been an element of participation that I wouldn't normally get.

The teachers involved in this stage of the design process were a diverse group: technology, PE, maths, modern languages, English and history were all taught in the  $360^{\circ}$ classroom to students from all year groups. The demands of different subjects and the needs of students of varying ages and abilities suggested that the flexibility of the classroom would be tested to the fullest extent. Having said this, the teachers met regularly to share their experiences and to recommend successful approaches to one another.

The teachers were involved in the evaluation in a number of different ways. They completed lesson proformas which investigated the use made of the classroom in terms of layout and lesson structure and perceptions of the quality of the teaching and learning in the session, as well as behaviour management. The teachers were also interviewed by the university team regarding their experiences of the design process. These data collection methods showed teachers were systematic in their approach to trialling different elements of the classroom. There seemed to be a desire to reflect and test the limits of each new element in turn, rather than to distract the students and teacher with constant innovation.

Apparent within the teachers' perspective, however, was a tension between the trialling and prototyping of new furniture and the teaching and learning of students, many of whom sat public examinations at the end of the school year. The level of impact on teaching and learning of an environment which takes a long time to set up and which frequently suffered technical problems should not be underestimated. The teachers nevertheless persevered for nearly two terms using the 360° classroom before a decision was made by the majority of the team to step back from the project:

It felt to me as a teacher that I was doing a lot of work and doing extra, doing my best and all the time I was hitting obstacles and hitting brick walls and because it was just before the exams I thought, that's it I've had enough.

I wouldn't say it's wrecked, but it's severely disadvantaged my boys' progress because I spent so much time messing around trying to make things work.

In addition, and key to this article, the teachers were also involved in consulting the students as part of the evaluation. All of the data collection tools that were used to gather the student viewpoint were administered through the teachers. It was apparent that while this was felt to be an important part of the evaluation of the classroom, it was also another factor which impacted on teaching and learning time. The balance which has to be struck in teachers minds between the trialling of new elements of the classroom, the consultation and evaluative aspects of this and teaching and learning is an important consideration in any design project. While at the end of this project the school staff were still open to the prospect of further innovation and research, they were concerned that the process should be more strategic and tightly planned, with regular meetings focused on practical issues.

#### Students' perspectives

The students were involved in the project right from the design 'ideas' phase. In fact, as already discussed, the designers picked up on one student's idea and it was this that sparked the transfer of focus away from the Geography Department and towards the

concept of a 360° classroom with many direct consequences. This is the first lesson that we feel can be learnt from this case study: students might have fantastic, futuristic ideas regarding their learning environments but are they practicable? Are they closely linked to objectives for learning and teaching, do their ideas fit with the other individuals who have to use the space (the teachers, the cleaners, etc.) and do the ideas comply with the context into which they are to be implemented? In other words it is not enough to consult one group of users and to take just those ideas independently of others. As with research, there needs to be a triangulation of data and a validation of conceptions built on differing perspectives. Indeed it could be argued that the students have the least commitment to the space as they are relatively temporary occupiers of the school, while the teachers and other staff are likely to be more constant.

The students' attitudes to the resulting design were gathered over the research period using a number of research tools including a *Plus Minus Interesting* (PMI) activity and an annotated photograph of the 360° classroom (an identical image to that used in Figure 2). It was felt to be important that the methods were not time consuming for the teachers to use, for the reasons highlighted above. However, we also wanted them to incorporate some sort of visual element and to be a task that they would be closely associated with school. By using tasks, such as a PMI, which are similar to those set by teachers, and by using worksheet-style recording, the tools aimed to avoid becoming too disruptive for students and teachers alike. The qualitative data were analysed by university researchers using Nu\*Dist (Richards and Richards, 1995) and then the results were validated with the school staff. Ideally we would have liked to have done this with the students themselves as well but imminent exams meant that this was not possible.

The PMI activity was completed initially by a class (n = 23) of Year 8 students in December 2004 after their first lesson in the 360° classroom: a total of 217 units of text were included in the analysis. It was then repeated with a larger sample of 97 students, from Year 8, Year 9 and Year 10 during the summer term 2005. This meant that a comparison of data was possible over the duration of the trialling and prototyping process.

The frequency of comments in each of the sections was calculated. In the first PMI exercise this showed that 91 comments were in the *plus* box, a further 75 were included in the *minus* and 33 were written under the *interesting* heading. Therefore it is possible to state that although the difference is slight students at the stage of the evaluation were more likely to be positive than negative after their first visit to the 360° classroom. With the second PMI the balance of positive, negative and interesting comments has changed while students have been using the classroom: after the initial visit, students were broadly balanced between positive and negative comments, whereas by the end of the summer the problems of the classroom seem to dominate (this can be seen in Figure 3).

Over the school year that the students were exposed to the new learning environment there was a distinct change in attitude, which would seem to be an argument for any consultation to be systematic over time rather than being an isolated enquiry. However, the full impact of such consultation, linked to the process of prototyping and trialling, should also be considered. In the previous section, the teachers were shown to find this aspect of the design process stressful due to the disruption to teaching and learning time that it caused. It is not unrealistic to consider that this strain was also felt by the students, whether passed on through the teachers or through a similar worry about lost teaching and learning time.

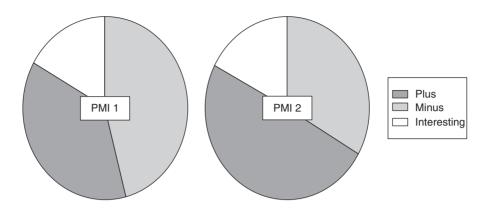


Figure 3: Balance of comments across the two PMI data collections

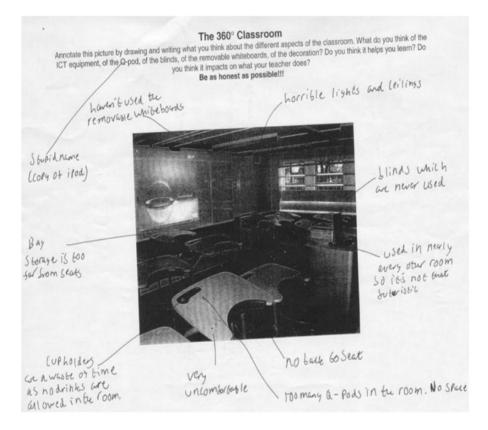
Gaining the views of the students using the PMI and the annotated photograph (see Figure 4) gave the research team several key insights. The students were thoughtful and strategic in their evaluation of the different aspects of the classroom. They were very aware that this was a classroom, even if one which was aimed at 'the future', and that this meant an awareness of its purpose for teaching and learning was needed. This awareness of potential can be seen for example in the students' evaluation of the blinds, whiteboards and technology heart, all of which were initially positively received. These aspects of the room did not receive any negative comments in the first PMI. However, in the second, some issues started to emerge, which again highlights the need for strategic consultation over time. At the end of the school year, the whiteboards were still mentioned positively but some students felt they were hard to clean, others commented that although they were meant to be moved, this was not happening and a third group felt that the process of moving them was awkward.

Throughout the evaluation process students were impressed by the elements of new ICT incorporated into the room, commenting on the ability to project their own work, to watch video and use audio material. However, the negative comments almost all related to technical problems, particularly with the sound system. Furthermore, one student commented:

We've got this technology in other classrooms, I thought this was supposed to be futuristic?

As Figure 5 shows, ICT-related comments were by far the most common element of the positive comments but the introduction of the air conditioning drew favourable comment and the flexibility and layout continued to be valued by some students. The buzz of being in a new classroom, of trying something different and futuristic was mentioned.

Positive associations with ICT could be seen as inevitable when new technology is introduced into students' worlds. Yet the positive reaction to new technology, especially by students, is likely to be relatively short-lived and, perhaps, out of proportion to its actual utility (Cuban, 2001). Therefore, to invest large amounts of money in new ICTs or to centre a design too extensively around them is inherently risky. If nothing else, new technologies need new technical skills within school for their maintenance, they



*Figure 4:* A photograph of the classroom was given to the students to annotate

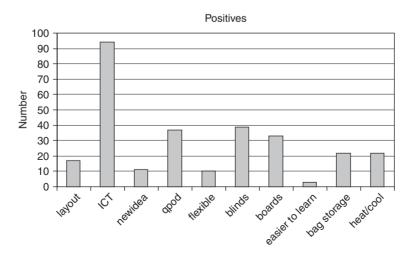
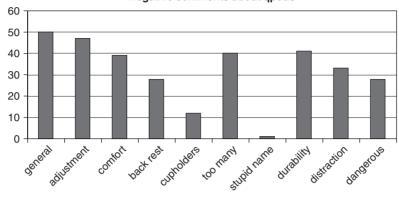


Figure 5: Graph showing the positive comments

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Negative comments about qpods

*Figure 6:* Graph showing the negative comments about the Qpods

are likely to have associated start-up issues and are also likely to date quickly. With the latter, the students are likely to be the first ones aware of this aging process and any new developments which become available as a replacement, and this could then exaggerate any negative change in student attitude.

Apart from the ICT, potentially the newest element of the 360° classroom was the Qpod. This was the element that was central to any use of the classroom with students, but particularly to the innovative use of the learning environment. However, the Qpods dominated the negative comments on the PMIs and the annotated photographs.

So many comments were made about the Qpods (they were mentioned in over a third of the negative comments), that it was necessary to examine them in detail (Figure 6). Around a quarter of these comments were general negative comments such as 'rubbish chairs', but the remainder dealt with specific aspects. As was noted previously, most students were constructive in their criticism and showed understanding of the design process and all that it involved, and this even extended to commenting on this controversial element of the classroom. Having said this, when difficulties with the adjustment mechanism on the chairs continued to be an issue and was not repaired or changed, then it became the most common area of condemnation.

Although falling chairs might be categorized as 'adjustment', a separate category was set up for specific mentions of danger, as this was the language the students used. Some of the dangers mentioned applied to problems of slipping off the chairs when turning to look at the blinds, or when engaged in group work. Another two categories, those of comfort and the lack of a back rest could have been collapsed together, but the sheer volume of complaints about the backless chairs seemed to justify a specific category. Students also returned to the theme of too many Qpods in the space, which had been highlighted in their criticism of the location of the project. A further important point is the number of students who questioned the durability of the design.

Over the year, the students' views were important in informing the evaluation, and, taken alongside the teachers' opinions, they give a genuine insight into the practicalities of implementing redesign in a school setting.

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#### Concluding thoughts

Any consultative or participatory design process is based on an underlying rationale, which includes central aims and background understandings, and will influence who is consulted and how the process is carried out. It is apparent, from both the historical perspective and the case study, that the decision about who to consult is important both to the progress of the process and the nature of the outcomes. It has been argued that the emphasis during the 1960s school redesigns on consulting senior teachers and local authority advisors produced some misleading ideas about appropriate settings for teaching and learning. Certainly it seems vital to question the tendency then to ignore the views of students, especially since it has recently become expected that any consultation should involve young people.

However, there are problems associated with consulting students about school design. As has been pointed out above, they will inevitably be moving on fairly quickly and it could be argued that teachers and other school staff are in better positions to give more balanced, long-term views of needs. As has been mentioned earlier, in the study of Bennett et al. (1980), a number of the teacher respondents were of the opinion that they themselves should not be consulted about future school building plans as they would only be able to give an individual view tied to their own time and place. Clearly, whoever is involved, this will always be a concern, and the only solution would seem to be to consult as widely as possible.

If such wide consultation is attempted, the problems of reconciling conflicting views and allowing the process to continue are increased. It was suspected by many of those involved in the case study classroom redesign that insufficient thought had been given to alternative views, with, instead, an initially quite vague idea being seized and developed. This was perhaps accentuated by the fact that many of the teachers who eventually used the room had not been involved in the initial planning. However, if maximum care is taken in such circumstances to understand and include all relevant views and ideas, it will tend to further complicate and lengthen the design process, bringing us to the question of how consultation should be carried out.

The reports of Bennett et al. (1980) and the NUT (1974) into the 1960s and 1970s consultation of teachers criticize pseudo-consultation and emphasize that consultation must be genuine. As design is an ongoing process, part of this must be the realization that consultation is not an event, or even a series of events. Rather, it is a process which allows all parties to explore the extent of a problem, to look at different perspectives, to audit current practice and to dream of future approaches. Within a design process, there should not be a time at which consultation is 'over' and users feel that they can no longer comment or request change.

Such processes of consultation and iterative design development take time, however, which can impinge on teaching and learning. It can be seen from the case study that both teachers and students can become frustrated if the process of developing and evaluating a new design is too time-consuming. In general, there must be a tendency for users to withdraw from the process, and the reluctance of many teachers during the 1970s to adapt their teaching practice to new settings can be seen partly in this light. In the case study school, it was observed that some of the initially enthusiastic teachers did not feel able to continue working in the redesigned classroom while the students became increasingly negative about the design.

There has been an important change in the language surrounding educational architecture, which privileges consultation and ensures that in the initial stages of design and the selection of designers and builders, teachers, parents and even students are able to have a voice. However, the case study shows that the message which is heard by designers and architects is no more certain to lead to a complete design solution and still runs the risk of being unrepresentative of the full range of relevant views. The difficulty, noted in reference to the 1960s consultation of educationalists, of deciding whom to consult in order to reveal to architects and designers the needs of education, is not completely solved by emphasizing the involvement of students. In fact, by further complicating and lengthening the design process, the genuine participation of a wide range of people might make it still harder to balance the long-term need of design with the day-to-day requirements of teaching and learning.

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#### Note

1 http://www.designcouncil.org.uk/

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