

CAN PANOPTIC SCHOOL INFRASTRUCTURE LEAD TO DISRUPTIVE AND DANGEROUS STUDENT BEHAVIOUR WHICH MAKES SCHOOLS UNSAFE

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Having safe schools is of the upmost importance, but evidence has shown that school buildings often do not achieve this and that the most disadvantaged students get the worst provision. This research examines whether school buildings can create the conditions for disruptive behaviour. Using the example of the UK's 21st Century Schools Programme, which has a guiding principle to improve educational outcomes and attendance, interviews with pupils and school staff were analysed using Foucault's concept of the Panopticon to explore whether panoptic school buildings that focus on students' supervision can unintentionally create the conditions for disruptive student behaviour. Both school staff and pupils described incidents where pupils had been excluded from school because of disruptive and dangerous behaviour. If we are to build schools that improve educational outcomes, we need to consider how we construct schools that ensure students are not encouraged to engage in disruptive and dangerous behaviour.

Keywords: panopticism; school infrastructure; educational outcomes; student behaviour

INTRODUCTION

The United Nations (2012) sustainable development goals set the scope for the worldwide development agenda they require all countries to 'build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.' Rolfe *et al.*, (2022) highlight that despite worldwide recognition of the need to build schools for the future and the significant capital investment involved, there is scant research in architecture, construction, facilities management, and education which acknowledges the educational goals of school infrastructure projects. There is limited research on how school infrastructure affects student outcomes, and it tends to focus on issues such as temperature, lighting, acoustics, and functional furniture rather than if the features of the school have a negative impact on behaviour (Barrett *et al.*, 2015; Barrett *et al.*, 2019). The lack of research on the procurement design, development, and the effect of school buildings on end users is surprising, considering the amount spent on these programmes (Rolfe *et al.*, 2022). Tse *et al.*, (2015) use the UK Government's Building Schools for the Future (BSF) programme as an example and explain that despite 1004 schools benefiting from the programme, few detailed studies have been

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conducted on the experiences of the schools' end-users. Tse *et al.*, (2015) suggest that there is a cogent argument to understand not only the design and procurement process of school infrastructure programmes but also the need to learn lessons on the impact of school buildings for end users. Conlin and Thompson (2017) explain that following a 1995 report on the disrepair of school buildings in the USA, almost one trillion dollars was spent on new school infrastructure projects, and an additional \$200 to \$300 billion was spent maintaining existing deteriorating schools.

Research suggests that there is a need to look beyond how the classroom environment can affect learning outcomes and look at how the whole school building can impact other dimensions of education, such as behavioural development (Barrett *et al.*, 2015). There is limited research on the contribution of school infrastructure to the likelihood of a child being excluded from school. This paper seeks to address this gap in knowledge by examining if any characteristics of school buildings make it more likely for children to be excluded from school. Exclusion from school is when children are asked to leave the school building. If they are excluded for a fixed term, they are asked not to attend the school for a specified time. If children are permanently excluded, they are not allowed to return to the school, and an alternative educational placement needs to be sought (Welsh Government, 2019). Research highlights those marginalised pupils, e.g., some black and minority ethnic groups, children with disabilities and additional learning needs (ALN) and socioeconomically disadvantaged pupils, are disproportionately excluded from school (Graham *et al.*, 2019).

This paper seeks to address the gap in knowledge by examining how school infrastructure contributed to pupils being excluded from school by answering the following research questions:

- Are there spatial characteristics of school buildings that contribute to the negative behaviour of some pupils.
- Are school staff more concerned with how they can fix the pupil rather than the pupils environment.

Literature

Research by van Liempd *et al.*, (2020) suggests that the links between the spatial and indoor characteristics and physical environment of schools and how they are linked to children's social and cognitive behaviour is understudied. Suggesting that one area of future research would be to examine the role that physical indoor environments have on children's social and cognitive development by giving them opportunities for 'action, exploration and interaction' (van Liempd *et al.*, 2020: 2). Where there is research it tends to focus on classroom spaces or play spaces rather than corridors and other communal spaces and on early years settings rather than on high schools (Barrett *et al.*, 2015, van Liempd *et al.*, 2020). Durán-Narucki (2008) suggests that children living in poverty might be more affected by school buildings because they are more likely to have adverse behavioural and socio-emotional difficulties, and the risk could be exacerbated by exposure to unsatisfactory school infrastructure.

One of the reasons why there is a lack of research on the link between school infrastructure and negative behaviour might be because when children misbehave, school staff and parents can look at how to fix the child and greater emphasis should be placed on improving the quality of the child's environment (Barrett *et al.*, 2019) Moreover, older school buildings have been associated with higher student absences, exclusion from school and negative behaviour (Conlin and Thompson, 2017). The density of school spaces, as well as school infrastructure, could have an impact on

behaviour (Rolfe *et al.*, 2022). As Rolfe *et al.*, (2022) suggest, there is a lack of planning for when pupil numbers increase, and this can lead to overcrowding in areas where pupils assemble and play. Headteachers and teachers have observed that a higher density of pupils leads to a higher density in playgrounds and communal areas, impacting children's behaviour (Rolfe *et al.*, 2022). Barrett *et al.*, (2019) report that based on an economic argument, larger schools are increasingly being built because the larger the school, the lower the cost per student. However, larger schools have disadvantages, including higher absenteeism and vandalism rates (Barrett *et al.*, 2019).

Research examining the impact of school infrastructure on learning outcomes has tended to focus on early-year settings rather than secondary schools (Barrett *et al.*, 2015, van Liempd *et al.*, 2020). Early childhood education and care practice acknowledges the importance of the physical environment; it examines the relationship between the layout of the physical environment and children's behaviour and is an established component of curriculum and pedagogy (van Liempd *et al.*, 2020). Barrett *et al.*, (2015) examined the impact of classroom design on learning; they focused on the experiences of primary school pupils because they spend most of their time in one classroom. Barrett *et al.*, (2015) demonstrated that the built environment affects learning progress, and buildings generally affect human performance and well-being. They suggest that this research should be built upon, and concepts and techniques that examine how school buildings impact learning and behaviour must be further developed (Barrett *et al.*, 2015).

Contractors must be aware of the educational vision of school infrastructure projects and how the school environment can have a negative impact on how end-users use the building. Particularly when they are making decisions based on cost. Research by Tse *et al.*, (2015) explain that in the construction phase of school infrastructure projects, the contractor will be under pressure to deliver the project on time and at cost. They suggest this is a critical part of the project for ensuring quality, and decisions made in this phase, under cost pressures, can compromise the educational vision of the project and cause challenges for the project's end-users (Tse *et al.*, 2015).

Theory

The panoptic structure uses architecture and geography to maintain power over individuals (Foucault, 2019). Foucault (2019) describes Bentham's notions of the Panopticon, which is based on the idea of a spherical building with a tower in the centre; this tower has expansive windows with the peripheries of the building being divided into cells; each cell has two windows one facing the tower and one allowing light to travel from one cell to another. Foucault (2019) explains that all that is needed is to place a supervisor in the tower and have a patient, prisoner, or school pupil in each cell. From the tower, the supervisor can observe each cell. The aim of the Panopticon is to make the people occupying the cells feel that they are constantly visible because they never know if they are being observed (Foucault, 2019). Foucault (2019) suggested that panoptic structures can reduce the number of people exercising power whilst increasing the number of people over which power is exercised. Foucault (2019: 243) explains that spaces can be panoptic without the Panopticon spherical architectural model; they are spaces where power is exercised through surveillance. Foucault (2019) highlights that the Panopticon is the hierarchical organisation of individuals in spaces where channels of power are implemented for a group of individuals where a task needs to be completed or individuals need to behave in a

particular way. Panoptic spaces are multipurpose in that they can reform prisoners, treat patients, instruct school children, and supervise workers (Foucault, 2019).

Research by Gallagher (2010) used Foucault's theories of the Panopticon as a starting point to examine disciplinary strategies and tactics that are developed and used in practice in schools. Gallagher (2010) found that Foucault's writings on the Panopticon delineate a model of power that reflects models of power in modern schools. Gallagher (2010) highlights that schools are panoptic because they are spaces of constant surveillance and monitoring where power is exercised. In the school he examined, surveillance was widespread, common and undertaken by teachers and pupils. Gallagher (2010: 264) noted that some children were subject to different kinds of power; notably, a small number of 'confident, dominant, loud and aggressive boys' were more commonly the targets of surveillance. Perry *et al.*, (2023) explain that surveillance is built into schools to reduce the amount of time teachers spend maintaining physical safety and reducing disruptive behaviour, which is connected to health and safety. Burke (2005) suggests that school walls, corridors, canteens and doors do not just act as containers for school children. They also act as 'resistance and sites of contested desires', sites of struggle of places where power is exercised (Burke, 2005: 493). Gallagher (2010: 271) suggests that surveillance is at the heart of the Panopticon, and surveillance is an activity designed to produce the impression of control in the face of 'untameable chaos.

The Welsh Government's 21st Century Schools Programme is a long-term capital investment programme that aims to improve learning environments and, subsequently, outcomes for learners in Wales one of the countries of the UK (Wales Audit Office, 2017). The Welsh Government's (2018) guidance on building schools as part of the programme includes meeting the Building Research Establishment Environmental Assessment Methods (BREEAM), Climate Change readiness, Community and out-of-hours use, and Building performance and avoiding rising energy costs. One of the programme's aims was to create learning environments for children and young people aged 3 to 19 for school improvement to achieve better educational outcomes (Wales Audit Office, 2017). Despite the programme's aims of improving schools and achieving better educational outcomes, the way children and young people interact with the school environment and how this can impact behaviour does not seem to have been considered. Although the programme followed guidance on designing schools for children with disabilities and special educational needs (Wales Audit Office, 2017). This type of school infrastructure project is not unique to the UK. For example, the 21st Century School Fund in the USA was a more extensive school investment programme (Conlin and Thompson, 2014).

METHOD

This study draws on interviews with headteachers and pupils across two local authorities (LAs) in Wales as part of the ESRC-funded Excluded Lives project. We interviewed four headteachers in two LAs, LA1 and LA3, in south Wales. In each LA, two core schools were selected, one with higher than expected (HTE) and one with lower than expected (LTE) exclusions from school. Three of the schools had been developed as part of the 21st Century Schools Programme and formed due to at least two smaller secondary schools amalgamating. The remaining LTE-excluding school in LA1 was redeveloped in the early 2000s and was a faith school. This school just moved to a new building and had remained around the same size and had not amalgamated with another school. Headteachers were interviewed about the

strategies they used to prevent exclusion and the behaviours that put pupils at risk of exclusion. We also interviewed 16 children who had been excluded from school. In LA1, it was not possible to interview young people in our case study schools for several reasons, but mainly because fieldwork took place during the COVID-19 pandemic. Instead, we interviewed eight young people in alternative provision settings who were all permanently excluded from school. While these young people had not attended core schools, they were within the case study LA, and the project team had conducted site visits of the school where they had received their permanent exclusion. Five young people interviewed in AP attended this super school, that had recently been formed as part of an amalgamation, this school had similar school infrastructure to the HTE excluding core school but was a LTE excluding school. Three of the young people interviewed in AP were excluded from the analysis because they attended a school where no site visit had taken place. In LA3, we interviewed three young people in our HTE and four in our LTE, excluding school. In LA3, the pupils had received fixed-term exclusions, and school staff identified them as at risk of being permanently excluded from school. While there were disadvantages to not interviewing young people from our core schools in LA1, there were also advantages as they spoke more freely about their experiences in school. We asked young people about their experiences in school and the incidents that led to their being excluded from school.

Interviews were semi-structured and guided, as general themes needed to be covered in each interview. This allowed some flexibility for the researcher but ensured that all the major themes were covered (Lichtman, 2014). Interviews lasted around an hour and were recorded and transcribed verbatim. Initially, inductive analysis was used following Braun and Clarke's (2023) thematic approach, interview transcripts were coded to produce a set of themes; this enabled the researcher to focus on factors that headteachers and pupils felt contributed to pupils being excluded. Next, deductive analysis was used, where data was coded based on Foucault's concepts of panopticism. It was used as an interpretive lens to examine if school infrastructures were panoptic and could impact behaviour (Braun and Clark, 2023).

FINDINGS AND DISCUSSION

Headteachers explained that pupils tended to be excluded for disruptive behaviour or a single dangerous incident. Other than not tolerating corridor wandering, the headteacher in the LTE excluding school in LA1 reported no behavioural issues due to the school infrastructure. As previously mentioned, this was a smaller faith school that had moved to a new school building and not been formed as part of an amalgamation with other schools. The HTE excluding school in LA1 was a larger secondary school that had been formed from an amalgamation of secondary schools as part of the 21st Century Schools Programme. The headteacher from the HTE excluding school in LA1 described how they had recently permanently excluded a student because she had thrown a stool off a balcony:

We excluded a girl who was in our nurture provision. Her behaviour has been excellent...but she picked up a stool on the balcony and dropped it into the canteen, 25ft - 30ft. And unfortunately, you can't see what's under the balcony. So if someone walked out. (It) was a deliberate act of dangerous behaviour. There was no real history of that before the girl (was) being silly. But if we don't go down that route...we can't have every pupil throwing a stool and not being punished (Headteacher Interview, LA1 HTE).

The schools in LA3 were formed from amalgamating schools within the LA. Headteachers explained that there could be more difficulties because socioeconomically disadvantaged pupils had to travel longer distances to attend school. The headteacher of the LTE excluding school explained that they had challenges with the new school initially because of its size and the 'different catchments' and parents had asked if it was safe for pupils to cover such a large area. The headteacher of the HTE school in LA3 described a 'massive uproar' when it was announced that one of the secondary schools would close and be amalgamated with others to form the current school. As well as different schools coming together, headteachers explained there were issues with the school infrastructure, which could lead to exclusions. The headteacher of the LTE-excluding school explained that exclusions were too high for pupils with additional learning needs (ALN). One thing they were doing that they thought would reduce exclusions was to change the layout of the new school building and develop several smaller classrooms. They explained that if school staff had been listened to, this further work would not be needed as there would have been smaller classrooms for pupils with ALN. They reflected that it was 'no good looking backwards, let's look forward':

We've got two classrooms at the back called our pods. They've been used for maths and English. The idea originally was that ALN (classrooms) would be in the middle of the school. It's too difficult in the form of sensory issues for children. There's too much going on there. It's a thoroughfare. (We are) developing seven to eight classrooms, we've got very specific uses for all the rooms, and we're going to put a garden around there with a fence so it's more contained (Headteacher Interview, LA3 LTE).

The headteacher in the HTE excluding school in LA3 explained that he had examined why children had been excluded, and quite often, it was for assaults or fighting. He had realised that negative behaviour and fighting was happening over lunch breaks when many pupils congregated in the same area. The school had kept the staged lunches that had been introduced during the COVID-19 pandemic to decrease the number of pupils congregating in the lunch area and reduce negative behaviour on lunch breaks that could lead to exclusions:

It was like the OK Corral down there. They were all in groups; they could mix in the yards, there would be more intimidation, more bullying, and they'd be scrapping. So, we wanted to do something with the lunches. COVID hit, which made us do something very different. So, if you think how it was, a Year 7 child, for example, would walk in pre-COVID, they'd come in, into the canteen with 1,100 other kids, They wouldn't have a seat...now they have a seat. The chances of bullying and intimidation have been slimmed down (Headteacher Interview LA3 HTE).

Where headteachers generally spoke about all the factors that could lead to a school exclusion, young people tended to focus on single incidents that led to their exclusion from school. In the HTE, excluding school in LA3, young people were interviewed together. Participant 1 thought pupils should get excluded if they were 'dropping stuff off the top floor.' He explained 'you can drop stuff off the top floor, and people drop their full water bottles.' Participant 3 also attended the same school he described how he had been excluded when he had thrown a bottle off the top floor 'I threw stuff, a full bottle of energy drink off the top floor, and it landed in some kid's curry, and the curry went all over him, and I got excluded for three days. It was a hell of a deal; it was funny that was. 'Participant 9 was interviewed in an alternative provision setting, he had been permanently excluded from a LTE excluding superschool in LA1, which had been developed as part of the 21st Century Schools Programme. Participant 9 had had a turbulent school career, but the reason he had been permanently excluded was when he had put another pupil in danger when he had hung him off a bannister:

Well, the last time I was (excluded) was because I hung a kid off a *banister*. He was being cheeky, saying he was going to do shit to my little sister... I was right in my eyes. They just said you're excluded for rules and putting a student in danger....I emptied his pockets, and I started shaking him over the *banister*...he said something to me to get me angry, and they didn't even exclude him, they gave him a detention (Pupil Interview, Participant 9 LTE Super school LA1).

As noted in the literature review, schools need to be panoptic and have spaces for surveillance and monitoring; they must give the impression of control, because power needs to be exercised to ensure the safety of staff and pupils (Gallagher, 2010). This study examined if creating panoptic spaces could also create school infrastructure, which could contribute to children's exclusion from school. Research question one asked if there were spatial characteristics of school buildings that made it more likely that a pupil would be excluded. The headteacher in the HTE, excluding school in LA1, gave the example of a pupil whose behaviour had improved, but she had thrown a stool off a balcony. They felt that they had no choice but to exclude her. Participant 1, who had been in the HTE excluding school in LA3, felt dropping things from a height should be a reason for exclusion. His classmate, participant 3, reminisced about throwing an energy drink in a kid's curry. Perry *et al.*, (2023) highlight the need for architects to expand their knowledge and understanding of how children behave and collaborate with educational professionals throughout the design process. The findings of this research suggest that while balconies might be needed in schools for surveillance it is not a good idea to have a school cafeteria under a balcony. This is one example where education professionals could have identified a potential issue with the design of the school.

The headteachers felt that physical characteristics of school buildings could contribute to pupils being excluded. A headteacher described how the school cafeteria had not been built to accommodate all the pupils at once, and overcrowding had led to bullying, fighting, and other disruptive behaviours. While it may seem more efficient to supervise pupils simultaneously during lunchtime, the impact that limited space would have on pupils' behaviour did not seem to have been considered. The school infrastructure was identified as a contributory factor to exclusion, and this could be because there was a lack of planning about what could happen when students congregated in a communal area (Rolfe *et al.*, 2022). The headteacher had introduced staged lunchtimes, which had resulted in a significant reduction in negative behaviour. The issues faced in this school reflect research by Rolfe *et al.*, (2022), who found that a lack of planning can lead to overcrowding in areas where pupils assemble and play. The evidence suggests a lack of resources rather than a tendency towards panopticism, could lead to school infrastructure contributing to negative behaviour. Barrett *et al.*, (2019) explained that based on economic arguments, larger schools are increasingly being built because the larger the school, the lower the cost per student. However, Barrett *et al.* (2019) also note that larger schools can lead to higher absenteeism and vandalism, contributing factors to pupils being excluded from school. The need to build increasingly larger schools and achieve economies of scale could lead to panoptic spaces. Foucault (2019) explained that panoptic structures reduce the number of people exercising power, increasing the number of people over whom power is exercised, which is helpful in increasingly larger schools. Gallagher (2010) suggests that looking at panopticism in schools as disciplinary power is useful. However, it is also important to remember that schools are learning environments, and buildings should be designed to help improve educational outcomes.

Research question two asked if school staff are more concerned with how they can fix the pupil rather than the pupil's environment. This did not seem to be the case. Although the LTE-excluding schools in LA3 had recently been developed, there were already issues with classroom spaces for children with ALN. The headteacher had identified that exclusion from school for pupils with ALN was too high. The classrooms for pupils with ALN had been placed in the school's main thoroughfare, and because of the noise, there were sensory issues for the children. New and quieter classrooms were being built. It is difficult to see how the United Nations (2012) sustainable development goal, which requires that education facilities be disability-friendly, was considered when building classrooms for pupils who need additional support with learning in a noisy area of the school. If education staff had been more involved in the planning and development process, the building would have made more sense to them and improved the learning outcomes of, in this case, pupils with ALN. Rolfe *et al.*'s (2022) research highlights the importance of stakeholder involvement in school infrastructure projects and how school staff have a mutual responsibility as they have the educational vision to collaborate in the design, delivery and operation of educational environments.

The literature review demonstrated that most research on school spatial characteristics is focused on younger children in early years and primary school settings (Barrett, 2015; van Liempd, 2020). The findings of this research suggest there is a cogent argument for looking at how secondary school children interact with their environment to inform future school infrastructure projects. It is surprising that, this is not already done, considering the levels of investment in these projects (Tse *et al.*, 2015; Conlin and Thompson, 2017; Rolfe *et al.*, 2022). These school infrastructure programmes aim to improve school buildings and student outcomes. Which is important because the evidence suggests that older school buildings can negatively affect learner outcomes (Conlin and Thompson, 2017). While research has looked at older buildings being associated with negative behaviour and exclusion from school, there seems to be no research on the impact of new infrastructure projects on negative behaviour and exclusions. If we are to improve the educational outcomes of all children and young people and achieve the UN sustainable development goals of inclusive education spaces, we need to look backwards to move forward and ask educational professionals and children and young people how we can build schools that can reduce behavioural incidents and lead to improved educational outcomes.

It is recommended that educational experts and pupils are consulted, listened to and their views acted on when new schools are being developed. It is also recommended that research is undertaken to examine how end users interact with new school buildings with particular focus on the larger schools increasingly built to achieve economies of scale (Barrett *et al.*, 2019). The findings of this study demonstrate that the end-users of buildings have useful insights which can inform the development of future school buildings. The example of the negative behaviour in the school cafeteria demonstrates the need to consider how pupils behave when a large number congregate in the same area at the same time. Similarly, placing classrooms for pupils with ALN in the school's main thoroughfare led to sensory overwhelm and classrooms in a quieter area of the school could have prevented this. Future research should capture the views of school staff and pupils, ensure the views of young people at risk of exclusion are captured, and inform the future development of school buildings.

It is essential to acknowledge the limitations of this study and consider other factors which could contribute to pupils being excluded. School leaders reported more

negative behaviour linked to the school infrastructure in the larger and newly formed super schools in LA1 and LA3. It is difficult to know all the factors which contributed to negative behaviour. As these schools were newly formed, pupils could respond negatively to a new and unfamiliar environment rather than the school infrastructure itself. Furthermore, it is unclear if these pupils would have been excluded if they had not moved to the new school. For example, it is noted above that Participant 9 had a turbulent school career, and he may well have been excluded for another incident had he not hung another pupil off a bannister. While this study presents a valuable contribution to knowledge examining if school infrastructure can contribute to school exclusion, future research could examine if there was a causal link between pupils being excluded and school infrastructure.

CONCLUSIONS

The lack of research on school infrastructure projects, student outcomes, and behaviour and exclusion is concerning. Given the worldwide investment in school infrastructure projects, there is a need to examine how school buildings influence pupils' academic outcomes, behaviour, and well-being to inform future infrastructure development and resource allocation. Most of the schools where fieldwork took place had been developed as part of Welsh Government's 21st Century Schools Programme, which aimed to improve attainment, learning outcomes, and the environment of pupils. This study looked at the experiences of headteachers and pupils of schools that had been recently developed as part of this programme. The data from headteachers revealed that school infrastructure could have a negative impact on behaviour, and features such as balconies, overcrowded spaces, and noisy classrooms could lead to pupils being excluded from school. However, headteachers were trying to resolve these issues, by changing the layout of classrooms and staggering lunch breaks. In contrast, young people spoke of single incidents that had led to their exclusions, often involving dangerous behaviour involving physical characteristics of buildings, including bannisters and balconies. This study reflects the literature that the physical designs of schools, including factors such as classroom design and the density of communal areas, can significantly impact pupils' learning and behaviour (Barrett *et al.*, 2015; Rolfe *et al.*, 2022). While there may be a need for schools to be panoptic spaces to ensure the safety of pupils and staff, surveillance is built into schools to reduce the amount of time teachers spend managing physical safety and reducing disruptive behaviour. The research findings indicate that the physical characteristics of school buildings can contribute to pupils being excluded from school, with examples such as balconies and noisy classrooms impacting behaviour. This study also highlights the importance of involving education professionals in developing school infrastructure projects to create learning environments that support positive outcomes for all learners.

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