2020 cohort

Peter Eardland – Physics Teacher

Do schools need to create new spaces to make outdoor learning more accessible?

The advantages of regular contact with green spaces include benefits to physical and mental wellbeing, and increasing connection to our natural environment (Berman et al., 2008; Bratman et al., 2012; Keniger et al., 2013; Pritchard et al., 2020). In schools, studies suggest benefits to health, behaviour, engagement, attention capacity, stress levels, socialisation, enjoyment of school, and retention of knowledge (Bell & Dyment, 2008; Blair, 2009; Chawla, 2015; Kuo et al., 2018; Largo-Wight et al., 2018). However, despite these benefits, young people today are outdoors less than ten years ago, made worse by the impact of Covid-19. There are also clear inequalities in access to green space, depending upon both financial and ethnic background.

In my opinion, schools, where children spend most of their daylight hours, should encourage the use of outdoor learning as far as possible. However, use of outdoor learning is not often discussed in secondary settings (Edwards-Jones et al., 2018).

This may be due to concern about curriculum relevance, teacher knowledge/confidence in using the outdoor setting; concerns about class management and behaviour; and practical considerations such as: weather, equipment; lack of a dedicated learning space (Barfod, 2018; Edwards-Jones et al., 2018).

A solution to some of these difficulties may be to provide a dedicated outdoor learning space that mimics a classroom as much as possible, while still providing access to the school's green space. However, to my knowledge, little comparative research has been done to support the creation of such learning spaces.

My hypothesis is that, due to the similarities with a normal classroom, a dedicated outdoor learning space with clear boundaries would help to improve teacher/student confidence and behaviour during outdoor learning, compared to using a space with no set boundaries or learning features.

In order to test this hypothesis, I asked Year 10 students and their science teachers to use two outdoor areas during a GCSE Combined Science topic (Forces and Motion). One area was an 'enclosed space', with more feature similar to a normal classroom, such as tables and benches, and four sides. The other was a very 'open space', the school field.

Because it is always important to keep the number of variables small in an experiment, I originally planned to create a dedicated classroom on the field itself. However, due to the financial expense and competition for space in the school, I was unable to find the resources or agreement to do this. I therefore used an existing, tarmac outdoor seating area. The main distinguishing features between this area and my ideal area is the lack of grass underfoot, and reduced sightlines over open space (Table 1).

I asked each class to participate in four outdoor lessons, two in each space.

Each student then filled in a questionnaire about their experiences of the different outdoor environments, and I used these questionnaires to identify key themes raised by the students (Table 2). I also interviewed the two teachers involved, using an interview schedule designed to assess similar perceptions as for the students.

Finally, I designed a behaviour monitoring sheet, that two students could fill in each lesson, recording both positive and negative behaviours. However, when I compared results from both students for the same lessons, they had recorded quite different behaviours. Therefore, I decided that these data were unreliable, and I did not use them in my analyses.

Teachers were more forthcoming about positive features of the enclosed space, and made particular reference to the presence of boundaries, which were useful when organising classes, settling students, and attracting attention, supporting my initial hypothesis. One teacher also said it was easier to engage pupils in the enclosed space

However, the majority of students (54 %) felt that behaviour was better in the open area compared to the more enclosed learning space (Figure 5). Also, the open area made students feel engaged with the lesson, have fun in the lesson, or find the lesson interesting (stated by 14 students). By comparison, while students enjoyed the practical activities in both spaces, only six students commented on feeling engaged in the enclosed space. Students appeared to have enjoyed the open space, even though many of them commented on the negative factors, such as weather/bugs (20 students) and lack of facilities (8 students).

I also asked students which area they felt the most secure in, and which they felt the teacher seemed more confident in. The majority of students answered the open space for both questions. Again, this was different to the teacher responses, whose answers were generally more in line with my hypothesis.

The differences in students/teacher opinions about the spaces could be motivated by the students' extra sense of freedom, and perhaps by the greenness of the space, which I was unable to control for. There is a large body of work supporting the idea that humans naturally prefer greener, savannah-type environments, open spaces where resources and threats can be identified from a distance (Balling and Falk, 1982; Ruso et al., 2003; Ulrich 1986). This effect has also been found to be stronger in children and teenagers compared to adults, who have had time to adapt to their living environment. It is possible that this evolutionary preference could be related to the student preference for the open field, despite the challenges of working there.

If I were to repeat the study, I would aim to revert to my original conception of the enclosed space as an area of the field that could be set up to have a boundary, and perhaps also with tables for lesson use. In any case, the evidence suggests that this approach may represent a happy medium between the two extremes. Boundaries and learning facilities were helpful for the teachers, and could be added to a green space in such a way that sense of freedom and openness could be retained.

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