Connecting young people with greenspaces: The case for participatory video

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Abstract

1. The values that people hold are thought to be key in bringing about the transformative change needed to halt biodiversity loss. Caring for nature has been conceptualised as a relational value and is thought to be largely shaped in childhood and adolescence. Relational values, arising from human–nature interactions, are increasingly being viewed as critical to halting biodiversity loss. However, caring for nature is not seen as sufficient to bring about pro-environmental behaviour; a sense of efficacy is thought to also be required.

2. As human societies become more urbanised, the greenspaces in and around our cities will become increasingly important as spaces where people can experience human–nature interactions.

3. In our study, we explore participatory video (PV) as a tool for (a) providing new insights on young people’s experience of greenspace, (b) enabling meaningful and transformative human–nature interactions and (c) building efficacy.

4. The films produced by the young people showed that greenspaces were not for them; they were associated with violence and bullying or simply thought of as ‘boring’. The study also provided unexpected evidence for the potential of PV, to not only transform the way previously disengaged young people viewed their local greenspace but also how they use it, benefit from it and begin to change their behaviours towards it. The PV process also enabled young people, individually and collectively, to connect with nature and experience activities that enhanced their efficacy, confidence and sense of empowerment.

5. We go on to discuss the potential of PV to help leverage the transformative change necessary to halt biodiversity loss and build more sustainable futures.

KEYWORDS
adolescents, efficacy, human–nature relationships, nature connection, pro-environmental behaviour, relational values, well-being

1 | INTRODUCTION

In recent decades, the global biodiversity community has made concerted efforts to better understand biodiversity, its loss, its role in human health and well-being, and its sustainable use and conservation (CBD, 2010; MEA, 2005; UN, 2015). Despite these efforts, the biodiversity crisis continues, and ecosystems continue to be degraded, with consequences for human well-being (IPBES, 2019).
While the direct drivers of biodiversity loss are now relatively well established, recent interdisciplinary research on human–nature relationships has focused on understanding the indirect drivers of biodiversity loss: the social values that individuals and societies hold for nature and biodiversity (Chan et al., 2016; IPBES, 2019). Values have long been recognised as key causal variables that, through their interactions with context, situational factors and personal capabilities, influence and shape people’s norms, goals and behaviours, including pro-environmental ones (Gardner & Stern, 2002; Steg et al., 2014; Stern, 2000). The balance of values that people hold are thought to have an important role in bringing about the transformative change needed to reverse the trend in biodiversity loss, and bring about more sustainable and just governance of our ecosystems (Chan et al., 2018; IPBES, 2019; Ives et al., 2018; Steg et al., 2014).

As a consequence, scholars from different disciplines have started to explore approaches and mechanisms on how best to leverage positive shifts in individual and societal values or propose ways to work more effectively with existing ones (Ives et al., 2018; Jax et al., 2018; Kendal & Raymond, 2019; Manfredo et al., 2016). Relational values (the preferences, principles and virtues associated with human–nature relationships) can help build upon, strengthen and link the values critical to nature conservation and pro-environmental behaviour (Chan et al., 2016, 2018). ‘Caring for nature’ has been conceptualised as a relational value, with evidence suggesting it is largely shaped in childhood and adolescence (Chan et al., 2016, 2018; Chawla, 2009; Chawla & Derr, 2012; Jax et al., 2018.). A review of developmental psychology research provides evidence that positive experiences in nature, through interactive socialisation processes with significant adults, can predict the emotional affinity with nature (empathy) helping to build environmental identity and the motivation to care for nature (Chawla, 2009; Chawla & Derr, 2012). The perceived and subjective connection to ‘nature’, broadly defined as nature connectedness, has been the focus of increasing research attention, improving our understanding of how different pathways and interventions may lead to pro-environmental attitudes and behaviours (Collado et al., 2015; Lumber et al., 2017; Soga et al., 2016; Wells & Lekies, 2006). Although there appears to be general agreement that the duration and frequency of nature experiences in childhood is important for nature connectedness (Barrable & Booth, 2020), a predictor of pro-environmental behaviour, there is still uncertainty about which aspects of nature experiences are most important in developing and maintaining nature connectedness (Bell et al., 2018; Bruni et al., 2017; Cheng & Monroe, 2012; Cleary et al., 2020; Collado et al., 2015; Lumber et al., 2017; Theimer & Ernst, 2012; Wells & Lekies, 2006).

Caring for nature is thought to be a critical motivational aspect behind the pursuit of pro-environmental goals (Schultz, 2002; Vining, 2003). However, as Chawla (2009, p. 15) argues, a motivation to care for nature is not in itself sufficient to develop pro-environmental behaviours; a sense of efficacy as part of one’s self-concept is also required: ‘people need to know about environmental issues, know what they can do, and believe that they have the ability to do what is necessary to achieve the goal they set’. Bandura (1997) outlines four processes in childhood development that promote a sense of efficacy: enactive mastery experiences, vicarious experiences, verbal persuasion and learning to deal with challenging activities that may induce stress, anxiety or fatigue. The development of self-efficacy is mediated through key processes: cognitive, motivational, affective and selective (Bandura, 1997). For example, in motivational processes, setting intermediate sub-goals, which are challenging but attainable, are more motivating than distant goals. In addition, activities which are considered valuable, such as self-satisfaction or have tangible rewards, can help motivation (Eccles & Wigfield, 2002).

Just as the social disconnection from nature is being increasingly recognised as an indirect driver of biodiversity loss (CBD, 2018; Nisbet et al., 2009), 68% of world’s population is expected to live in urban areas by 2050 (UN, 2019). Urban greenspaces are therefore increasingly important for people to access and connect with nature. The accessibility of greenspaces, however, depends on many factors including whether they are open to the public, within walking distance or perceived as safe to visit (Hand et al., 2018; Handley et al., 2003). Different types of greenspaces can also vary in biodiversity, both in species richness and habitat heterogeneity, and provide varying opportunities to engage with nature. Although biodiverse, high-quality greenspaces have been shown to provide positive well-being experiences, some aspects of ‘wilder’, more ‘naturalistic’, greenspaces such as dense woodland and untidy shrubbery, can elicit negative experiences, associated with safety fears (Barton et al., 2009; Bell et al., 2018; Fuller et al., 2007; Jansson et al., 2013).

To counteract low levels of engagement with nature and promote its health and well-being benefits, there has been a strong drive to develop nature engagement programmes. In the United Kingdom, examples include Forest Schools (O’Brien, 2009) and the Trust for Conservation Volunteers’ Green Gyms. In 2018, we were asked to pilot the use of participatory video (PV) as a potential tool to monitor the impacts of a new nature engagement programme in central Scotland. Although there is not one concise definition of PV (Milne, 2016; Milne et al., 2012; White, 2003), we use the definition by Lunch and Lunch (2006, p. 10): ‘PV is a set of techniques to involve a group or community in shaping and creating their own film’. Participatory video aims to bring people together to explore issues, voice concerns or simply be creative and tell stories. It has been argued that PV ‘gives voice’ to the so-called ‘hard to reach’ people (Lunch & Lunch, 2006). These new voices can shed light on local narratives that can remain hidden with conventional consultation methods (Manuel et al., 2017; Varghese et al., 2020). Although originally spearheaded by feminist filmmakers and film collectives in Latin America, PV has been used more recently for social and environmental advocacy, activism and empowerment (Khamis et al., 2009; O’Neill, 2009; White, 2003). Several environmental PV projects with young people have also indicated its empowering and emancipatory nature (Haynes & Tanner, 2015; Menter et al., 2006). However, within the context of nature engagement interventions, there are few documented and researched PV projects, with West (2011) being a rare exception. Young people’s participation in environmental issues
and social change is not limited to PV but can cover different modalities and governance levels, including arts projects, consultations and youth citizen assemblies (see Derr et al., 2018; Percy-Smith & Thomas, 2010). However, it is argued that for youth participation to be effective it should influence or create change in political or social processes (Sotkasiiira et al., 2010).

Taking this definition of effective participation, PV is not without critique. Several researchers have challenged the underlying assumptions of PV's emancipatory and empowering potential, especially in marginalised groups where systematic inequalities and power relations can remain unchallenged, even though individual participants may develop personally (Milne, 2016; Rogers, 2016).

1.1 | The case study and inductive research

We initially set out to investigate the potential of PV as a monitoring and evaluation tool for a nature engagement programme in central Scotland. We worked with young people (15-16-year-old school pupils) who had previously had very limited engagement with local greenspaces. The participatory videos were intended to be used as a baseline to document the young people's and their community's experience of local greenspaces prior to participating in a nature engagement programme. The school that the young people attended is located in a town with over 50% greenspace, and with mixed levels of social deprivation (SG, 2020). The greenspaces, as well as more formal parks and playing fields, include significant nature reserves of wildlife and conservation interest, including peat bogs, native oak woodlands and rare species such water voles and pine martens.

The research on the potential of PV as a monitoring and evaluation tool generated substantial and unexpected data on the impacts of the PV process on young people. These findings could have relevant implications for the use of PV as a potential transformative engagement tool, helping to build or enhance nature connectedness and agency in young people, both deemed necessary in developing pro-environmental behaviour and action.

In this paper, we therefore present our inductive analysis and results on the impacts of the PV process on how young people view, value and use greenspaces, as well as its impacts on young people's efficacy. We then go on to discuss the implications of our findings in terms of using PV as an approach to engage young people with their local greenspaces, and its potential role in helping build and develop relational values and efficacy, increasingly argued to be critical for the stewardship for nature and halting the biodiversity crisis.

2 | METHODOLOGY

2.1 | The participatory video process

From September 2018 to March 2019, we facilitated a PV process with 14 school pupils (hereafter referred to as 'young people'). Our study took place during school hours with young people participating in a support programme for those at risk of underachievement and exclusion (the 'Support Programme'). The PV process, adapted from Lunch and Lunch (2006) and Benest (2010), was deemed to align and complement many aspects of the Support Programme's learning objectives; teamwork, encouragement, development of communication skills, leadership and community engagement.

The PV process was split into three stages, each led by the research team (usually three people) with support from two teachers (one of whom was responsible for the Support Programme), a youth engagement officer from a local environmental NGO and, in the later stages, a home-school support worker. Attendance was voluntary; the young people were able to attend alternative classes if they did not want to participate in the PV.

2.1.1 | 1st Stage: Familiarisation, training and consent (September–December 2018)

The first stage of the PV consisted of six 90-min workshops, held in the first term of the school year. The aim of this stage was multifaceted: to build trust among the young people and between the young people and the researchers (facilitators), to establish ground rules, to learn how to use the film equipment, become familiar with different filming techniques and the concept of greenspace, and to provide an opportunity to discuss and reflect on their experiences of local greenspace. The introductory workshops involved adapted exercises and games developed by Lunch and Lunch (2006) and Benest (2010), such as 'Show and Tell'. The emphasis throughout the workshops was on having fun, being creative, spontaneous, inclusive, reflective, working in teams and active listening. A large proportion of the teachers' time at this stage was dedicated to acquiring parental consent to participate in the PV (in addition to the young people's own consent).

2.1.2 | 2nd Stage: Filming local greenspace, and community workshop (January–February 2019)

The second stage comprised two full days, where the young people created two montage films of their local greenspace. They were asked to film scenes using, as prompts, words that emerged in the 1st stage during the discussions about greenspaces as well as some generic words (i.e. 'having fun', 'boring', 'tiny', 'huge', 'movement', 'muddy', 'wet', 'tiring'). They were also asked to film a landscape shot and a sound of their choice. The resulting films were used to stimulate discussions on local greenspaces through a workshop with members of the local community. The community members included representatives from local environmental groups, residents, a local nursery and older geography pupils. Activities included participatory mapping (Benest, 2010) and answering open questions regarding experiences of local greenspaces. The young people were involved in organising and hosting the workshop, and performed different
roles including registering participants, interviewing and recording feedback.

2.1.3 | 3rd Stage: Creating PVs about greenspace and screening of films (February–March 2019)

The third stage consisted of three full days where, working in groups of four or five, the young people brainstormed ideas for their film, created storyboards, filmed footage and edited the films. Before the brainstorming session, the group discussed the feedback from the community workshop. Once all scenes had been filmed, the young people used the software, iMovie, to edit the footage, adding voice narrations, sound effects, subtitles and credits as they wished. The PV process culminated with a film screening for friends and family, selected school staff and participants from the community workshop.

Throughout the PV process, the researchers made observational fieldnotes. In addition, following the completion of the process, interviews were held with the youth engagement officer, the Support Programme’s teacher, the home-school support worker and two of the young people (aged >16 years).

2.2 | Consent process

We followed a rigorous informed consent process, based on Benest’s (2010) multiple stages of consent. In addition to the consent for the PV process, consent was also sought from the young people and their guardians for research purposes, and to record and note observations during the facilitated workshops. In most of the cases consent was written, however, for three young people consent was acquired verbally from guardians by the home-school support officer. This was due to the lack of completed consent forms handed in. Consent was also sought separately to conduct follow-up interviews with staff and two young people. Throughout the process, we strived to ensure that the young people were comfortable with their level of participation, and that the process was flexible enough to accommodate the different wishes of the young people, and any modifications.

2.3 | Analysis of the PV process and films

To understand how this group of young people experienced their local greenspace and the impact of the PV process, we analysed the following qualitative and mixed media data:

(i) Researchers’ observational and reflection notes and recordings from all the workshops, meetings and filming sessions.
(ii) Data collected from the workshop sessions exploring experiences and themes around local greenspace (e.g. participatory mapping, story-board brainstorming).
(iii) Direct feedback (oral or written) from teachers, the young people and support workers throughout the process. Feedback from the young people was collected through organised activities such as mood meters and regular feedback sessions.
(iv) The three final films and montages.
(v) Three semi-structured interviews (approximately 90 min each) with the Support Programme teacher, the home-school support worker and the youth engagement officer.
(vi) Two semi-structured interviews (approximately 20 min each) with two young people.

The semi-structured interviews focused on eliciting the interviewees’ views and experience of the PV process, the young people’s views on nature and greenspace, and on using PV as a monitoring and evaluation tool. Interviews were audio-recorded and transcribed verbatim. Data were subsequently managed and coded with NVivo 12. An initial inductive review and preliminary analysis led to the identification of broad themes (Greenspace Experience, PV for Monitoring and Evaluation, the PV Process, Film Content and Feedback), leading to a more detailed coding framework. The more detailed coding included topics such as changes to behaviour or views on greenspace, challenges of PV, general experiences and attitudes towards the process and the final film. The data from all sources were coded inductively.

The research was approved by the Ethics Committee of the James Hutton Institute (REC no. 145/2018, 23 August 2018).

3 | RESULTS

3.1 | Young people’s experience of local greenspace

Through the various PV activities, the young people openly expressed their views and experiences of being outdoors and using greenspaces, and indicated limited engagement with their local greenspaces. Their direct quotes, written or spoken, are indicated in italics. When asked how they use their greenspaces, a repeated response was that they do not use them because they are not interesting, or they ‘cannot be bothered’ and they ‘don’t even go outside’.

There were some exceptions to this general discourse, where specific locations were described as places with nice views, where one could calm down and ‘be oneself’. Walking the dog was an activity that some young people said they or their family engaged in. The young people also recollected specific school outings, for example, to a local pond two years previously, which they described as ‘relaxing’, ‘cold, muddy, freezing’, and as a ‘quiet space, good to see wildlife’. One young person recalled enjoying plantings wildflowers around the pond, and proudly exclaimed how they had excelled at it. Another greenspace memory was a school charity walk around the local loch, which was described by the students as ‘boring’, ‘roasting hot’ and ‘tiring’, but also fun, because it meant spending time and chatting with friends. Greenspaces are also used for spending time with friends, either biking or just sitting with them. Despite there being several
nature reserves within the local urban area, none of the young people mentioned visiting them.

One theme that emerged was that greenspaces are dangerous. During the brain-storming session for film ideas, the young people reported having been bullied or attacked in parks and the underpasses that connected the greenspaces. This theme became the main subject of two of the films produced. One film shows the main character being attacked by a group of teenagers while going through an underpass, then chased through a park and assaulted. The film ends with the attackers running away with a voice-over: ‘The whole idea of this film was to show people how dangerous greenspaces can be, and we’re hoping that towards the future these places change and get better for people’. In the other film, two teenage girls are harassed and later attacked by a group of bullies. The final scene shows a landscape view of a local loch with a message written across the screen: ‘You don’t notice the nice greenspaces because of the violence’.

The predominance of violence in the films was initially received with apprehension by the home-school support worker and youth engagement officer, as they were concerned that it reflected perceptions rather than lived experiences. However, the experiences of violence were also echoed by the Support Programme teacher and the youth engagement officer. The youth engagement officer offered their personal experience: ‘I’ve experienced that as well. I’ve had to run from teenage boys when I was eight, do you know what I mean? To somebody’s house and just phone my mum, can you come and get me? It does happen’. These concerns of personal safety, and the risk of violence, were also echoed and validated by the community representatives at the film screening.

Another theme was that local greenspaces were boring. One young person described how they enjoyed the challenge and achievement of climbing a Scottish mountain and contrasted this with their boring, local greenspace. The same young person recounted the time when, in a quest for adventure, they got stuck rock-climbing with their friends at a local disused quarry, having to be rescued by the fire brigade. Boredom is reflected in two of the films: one film shows one of the main characters being bored and depressed in a greenspace, and the other film opens with two teenagers being bored in a play park.

3.2 | Changes in perceptions of nature and greenspace

The PV process had an impact on the two young people we interviewed on how they perceived and subsequently used greenspaces. For one of them, this impact seemed quite profound, and even transformative. Before participating in the PV project, the young people generally had very limited experience of these areas, and the project provided an opportunity for them to discover, engage and most importantly ‘experience’ their local greenspaces. For one young person going for a walk in the local greenspace was something that they had never contemplated doing or even thought they could do.

As they expressed, ‘I already knew how like, you just go to the shop and come back with shopping, go eating. I never thought of going on a walk’.

When asked during the interview what they enjoyed the most about the project, the other young person said: ‘instead of just being like, this is a video that we made to show you greenspaces, we actually got to experience the greenspaces, to kind of live in that moment’.

Table 1 summarises the changes in perception and behaviours of one young person, as a direct consequence of the PV project. The filming process enabled this person to connect with nature, in a way they had not experienced before, allowing them to see and appreciate its beauty, and benefit from its calming effect. They explained how the filming process, such as having to focus to compose a scene and frame a moving person against a background, made them ‘look deeper into nature’. They felt the filming experience contrasted to walking in greenspace for the purpose of reaching a destination, where you do not take the time to observe and look around at nature.

Behavioural changes included stopping their siblings from littering, adopting a more physical lifestyle and using the local park to improve their mental health. This interview indicated that the behavioural changes were a direct consequence of filming and empathising with animals, as well as having a very positive experiencing of their local greenspace through the PV project.

3.3 | Changes in confidence, skills and engagement

The PV process and training activities presented the young people with both positive experiences and challenges, often taking them out of their comfort zones. There were a number of personal and group barriers for them to overcome to participate fully and engage with the PV, such as learning active listening, becoming comfortable with being filmed, and being able to effectively communicate with their classmates, the research team, the support workers and teachers. Table 2 summarises the young people’s key experiences of the PV process as observed by the young people, the support workers and teachers, and reported during the interviews. Below we discuss some of these key PV challenges and experiences, and how they may have contributed to the overall outcomes, such as increased self-confidence and engagement.

In the early stages of the PV process, the majority of the group felt uncomfortable being filmed, and some were nervous about handling the camera for fear of breaking it. There was, however, a small number of young people who were more confident from the very start in being filmed, as well as others who were technically adept and confident in using the filming equipment. The flexibility of the PV process enabled those who were uncomfortable being filmed to still participate in the process by filming, directing or checking the audio. As sessions progressed, more young people became increasingly comfortable with being filmed, filming, viewing footage of themselves and sharing their footage within small groups. For example, one young person who had initially not given consent to be filmed, in seeing their classmates being filmed and interviewed, volunteered to be filmed. One of the young people we interviewed...
example, two young people who had initially refused to participate and engagement, particularly once the outdoor filming started. For the process progressed, there was a noticeable change in their attitude and apathy in some of the young people. However, as the PV process continued, there was a positive change in their attitude and confidence in being filmed was reflected in two of the young people. One of the biggest challenges initially was the lack of engagement and apathy in some of the young people. However, as the PV process progressed, there was a noticeable change in their attitude and engagement, particularly once the outdoor filming started. For example, two young people who had initially refused to participate.

Feedback from one teacher who attended several sessions was as follows: ‘I was really impressed with how they responded and contributed when they were given some freedom of expression. I saw some of the pupils in a different light, and they really shone. Giving them the chance to be creative allowed them to demonstrate skills that a teacher described how they found being filmed very challenging at the start of the process: ‘I think the most challenging thing is getting recorded because I have stage fright so talking or doing that in front of people kind of got me nervous, but I just told myself like you can do this. You can … I just got over it, as more and more we used the camera’. The increased level of confidence in being filmed was reflected in two of the young people asking for their consent forms to be revised.

One of the biggest challenges initially was the lack of engagement and apathy in some of the young people. However, as the PV process progressed, there was a noticeable change in their attitude and engagement, particularly once the outdoor filming started. For example, two young people who had initially refused to participate in the first PV training session had by the end of the process taken responsibility for the filming of one film and assisting in another. During the interviews, all the three support staff reflected on the positive changes in engagement levels, behaviour, confidence and social skills. They attributed these changes to the PV process; the time given to building trust with young people, and the opportunities and afforded freedom which allowed skills and talents to shine.

**TABLE 1** The impacts of PV on one young person’s perception of, and behaviour towards, local greenspace and nature

| Theme | Topic | Quote |
|---|---|---|
| Changes in perceptions of local greenspaces | Appreciation of the beauty of nature | I never really understood nature… until we did that [the PV project], I never went out… I never went out just to walk about and see how beautiful nature is, how you can connect with different things, and how calm it could be. … It helped me see the world in a different way. … I thought it was really ugly and boring out there, but it’s really not. If you look at it in a different way, except from the litter and all the other stuff, it’s actually a beautiful place to be |
| Development of empathy towards wildlife | It was the deer that really opened up my eyes… if I litter right now the deer can eat the plastic and that would cause it to die and that’s not right. They have… they have feelings, they have many things. What we feel, they feel as well. If we feel pain, they feel pain |

**TABLE 2** The PV process presented both challenges and positive experiences and provided opportunities for the development of skills and self-confidence. Column A lists the initial challenges and barriers; column B lists positive experiences and column C lists changes in confidence, behaviour and attitudes

| Theme | Topic | Quote |
|---|---|---|
| Changes in behaviour | Changes regarding littering and trying to influence the behaviour of others | It was like a wake-up alarm to say we need to stop… like my little brother would litter and I wouldn’t say anything. I would just stay quiet, but now when he litters I try and cut off his head [figuratively]. He’s like ‘fine, fine, I’ll pick up my trash’ and I’m like ‘you’d better pick up your trash’. … You don’t litter outside |
| Nature as beneficial for mental health | On my exam leave it actually helped… I would go and just sit in the park and just study and just zone out. That actually helped with my stress because then I would just relax and just sit outside on the grass and think about nothing except for the beautiful blue sky |

A: Initial challenges and barriers
- Being filmed or audio-recorded—feeling self-conscious
- Fear of damaging the equipment
- Lack of effective communication skills
- Lack of teamwork skills
- Lack of confidence in interviewing strangers
- Negative attitudes
- Apathy
- Refusal to partake
- Onerous consent process
- Frustration and anger
- Difficulties in understanding the process and its objectives

B: Positive experiences
- Being heard and listened to
- Having freedom and autonomy
- Receiving approval and positive feedback
- Achieving beyond expectations
- Being treated as equals
- Having time for reflection
- Trust in the process and facilitators
- Receiving encouragement
- Enjoyable experiences
- Vicarious experiences
- Developing new friendships
- Creative learning
- Increasing ease at being filmed
- Sense of pride and achievement
- Confidence
- Public-speaking skills
- Sense of empowerment
- Improved general attitude
- Increase in assertiveness of shy young people
- Improved engagement
- Improved school attendance
- Improved teamwork/cooperation
- Mastery of cameras, audio, film editing, interviewing techniques
- Improved self-esteem
may not always get to see in the ‘traditional’ classroom environment. You could see them thinking, analysing their environment; reasoning, discussing and justifying. All very impressive stuff’.

For the home-support worker, one of the most important aspects of the PV process was the empowering effect on the young people of being trusted to produce a film that was genuinely about their experiences and of which they had full ownership of content and style. ‘They were listened to and I think sometimes in schools they’re not. I think that’s really empowering and I felt that they gained from that’. While initially the home-school support worker was nervous about the films only representing the views of the young people, and not any views from the community workshop, on reflection they saw the positive impact of it genuinely being their voice, and about their experiences. In fact, the films resonated strongly with the community at the screening event, receiving positive feedback and affirmed their lived experiences. The observed increase in confidence was supported by the young people’s feedback, with one young person commenting on how their confidence has grown, and that previously they would never have had got up in front of an audience to present their work.

While the young people may have struggled at times, the home-school support worker felt that overcoming these challenges was an important part of the learning experience. They felt that because they had seen the process through, risen to challenges and could reflect back on the experience positively they would be more likely to attempt doing something new again. A sense of achievement and pride in their film was reflected on by one of the young people interviewed: ‘I never thought in my whole entire life that I would be able to make a video with my friends or anything. I really didn’t think we were going to do that big, so I was so surprised and proud of what we achieved’. Overcoming group and personal challenges and barriers, to achieve results beyond what was expected, and to receive positive feedback from peers, family and the community was clearly an important enactive learning experience.

4 | DISCUSSION

Our study demonstrated the positive impacts of using PV as a nature engagement tool with a group of young people who were previously disengaged from their local greenspaces. Below we discuss this impact regarding human–nature relationships and building efficacy. We also discuss the management of greenspaces for young people and the need to address wider social and structural inequalities to ensure the benefits of greenspaces can be fully realised. Finally, we discuss PV as a potential engagement tool to help bring about the behavioural changes needed to address the biodiversity crisis facing society.

4.1 | PV to help develop human–nature relationships

The process of filming videos allowed the young people to experience and immerse themselves in greenspaces in a way they had not previously done. For some, the PV project was the first time they had been out into their local greenspace and it had a profound impact on their views of it. The film-making process (i.e. framing, close observing) created opportunities to observe nature in greater depth and detail and enabled the young people to look beyond the immediate litter and their lived experiences of violence to connect and see the beauty of nature.

For one young person, filming roe deer created a strong emotional connection with the animal and appeared to directly lead to pro-environmental behaviour. This empathy, and the development of this poignant relational value was facilitated by PV. Increasing numbers of scholars (Chawla, 2009; Ives et al., 2018; Lumber et al., 2017; Theimer & Ernst, 2012) argue that cultivating emotional connections such as empathy is an important aspect of building environmentally responsible behaviours, and our empirical study supports this. Interestingly, in a qualitative evaluation of outreach programmes, emotional connection with wildlife was the greatest in the programme which included direct, quiet observation of wildlife, which has similarity with aspects of filmmaking. Encountering wildlife in greenspaces has also been shown to lead to positive well-being experiences, which may further contribute to and enhance feelings of nature connectedness (Bell et al., 2018). As encountering wildlife appears to be important in building nature-connectedness and pro-environmental behaviours (Cleary et al., 2020), it is imperative that greenspaces are managed for wildlife and biodiversity in addition to amenity areas such playing fields and parks.

The nature connectedness experienced by one young person in our study was transformational, even more so, as they had no previous experience of the local greenspace. A recent review has shown that the biggest gain in nature connectedness is when there are low levels of nature connectedness prior to an intervention (Barrable & Booth, 2020). One could argue, therefore, that nature engagement programmes should prioritise people with little or no prior nature engagement experience, thereby leveraging the largest transformational change possible to address the biodiversity challenges facing society (Ives et al., 2018).

Another important aspect of the PV process was how enjoyable the young people found it. This empirical finding supports Eccles and Wigfield (2002) who suggest that the intrinsic enjoyment of a project is a key component of whether children engage with it. An additional component that warrants further investigation is exploring whether more creative approaches, such as PV, and giving people the freedom to engage with nature on their terms, enhances nature connectedness, as proposed Bruni et al. (2017). Another contributory factor to the success of the PV project could be the attainment of a nationally accredited qualification for achievement; attainment value being another important factor in determining whether children invest and engage in activities (Eccles & Wigfield, 2002).

4.2 | PV to help build efficacy in young people

The PV process had an impact on key aspects of adolescent development that promote a sense of efficacy, thought to be a prerequisite
to pro-environmental behaviours and action (see Section 1). It enabled the young people to learn new skills, overcome challenges and achieve substantial goals. These achievements were carried out in a supportive and encouraging environment, allowing the young people to engage with different PV activities, according to their own perceived abilities, and gradually gain the confidence to take on additional roles. The PV process provided many opportunities for vicarious experiences, such as seeing their peers being filmed and engaging in role-play.

Changes in confidence and engagement have been documented in other PV projects with young people (Haynes & Tanner, 2015; Rogers, 2016). However, a limitation of our study is that we were unable to assess whether individual increases in nature connectedness and efficacy could be further leveraged for greater stewardship action. The original intention was that the PV project would continue over 4 years, with peer-to-peer learning of PV to monitor greenspace experiences over time. However, the school ended their participation in the Support Programme and so our research on PV also ceased. We believe, though, that the roll-out of PV across the school and the wider community would have the potential to build nature connectedness and collective community action in greenspace stewardship, as seen in other youth participation programmes with embedded multiplier effects (Shier, 2010).

To reach young people with little or no engagement of nature, we recommend that education authorities support nature connection and community projects within school curricula. To this end, longitudinal, life-course, observational and ethnographic research would be required to better understand the legacy of PV as a nature engagement tool to leverage pro-environmental action.

### 4.3 Managing greenspaces for young people

The PV process, culminating in three short films, demonstrated that for this group of young people, their experiences of greenspaces prior to PV were mostly negative. This is an important finding, as people who do not report enjoyable activities in nature during childhood are less likely to report an interest in nature or protect it in adulthood (Chawla, 2009). However, the lived experiences of the young people in our study must not be separated from the social and environmental injustices which many UK urban communities face after over a decade of austerity (Hastings et al., 2015). As outlined in a recent UK parliamentary report on public parks (HC, 2017), sustained and cumulative budget reductions have had substantial impacts on staffing levels, affecting park maintenance and upkeep, as well as community engagement programmes. The impacts of such funding cuts, especially on personal safety, may disproportionately affect some groups more than others, such as the young people in our study, potentially leading to further social environmental injustice (Maruthaveeran & van den Bosch, 2014). Without reversing the significant financial constraints imposed on local governments, it is unlikely that the personal safety of young people in many greenspaces will significantly improve. And unfortunately, without more systemic approaches, generations of young people may not experience positive nature connections which may be on their doorsteps but unknown or inaccessible (Cronin-de-Chavez et al., 2019; Kabisch, 2019).

### 4.4 Potential of PV to help leverage pro-environmental behaviour?

While PV can be challenging and resource-intensive, we have demonstrated that its benefits are substantial, building a strong case to use PV as a nature engagement tool. The creative and freer pedagogical approach of PV appears to have facilitated the connection of young people with each other, with research, the facilitators, support workers and the nature in their local greenspace. The PV process also possibly elicited a deeper cognition of the interconnectedness of the issues faced by young people and their communities, their relationship to one another, and with nature.

In addition, the totality of the PV process appears to realise the experiential, cognitive and emotional leverage points that are suggested as needed to bring about the change to address the biodiversity crisis (Ives et al., 2018). We have demonstrated that PV successfully connects people to nature, people to people, and helps build efficacy and self-confidence in marginalised, disengaged young people. Participatory video has the key ingredients to develop collective pro-environmental behaviours and actions necessary for a transition to a more sustainable society. However, to reach its full potential in instigating societal change, like any other effective participation, PV will need to be supported over longer time periods to ensure a multiplier effect (Shier, 2010).

We also acknowledge, as others have, that there may be limits to the extent to which PV can truly empower communities to take pro-environmental action, especially when confronted with obstacles of systemic or structural inequality (Milne, 2016; Rogers, 2016; Tayne et al., 2020).

### 5 Conclusion

Our study, while with limitations, demonstrates that PV has the potential to engage previously disengaged young people with the issues around the stewardship and use of local greenspaces, and to facilitate both the development of human–nature relationships and efficacy, considered to be important in reversing the trend of biodiversity loss. PV appears to offer an approach that raises the consciousness, empathy and efficacy required to leverage a transformation change towards more sustainable and liveable societies. However, facilitating human–nature connections in young people, especially in socially deprived areas, requires greater resources and investment in urban greenspaces to ensure they are safe and accessible. Without such investment, it is unlikely that generations of young people will be able to benefit from the urban nature on their doorsteps, a tragedy for both future generations and biodiversity.
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CONFLICT OF INTEREST
The authors declare no conflict of interest.

AUTHORS’ CONTRIBUTIONS
A.E.: Conceptualisation, Methodology, Investigation, Formal Analysis, Writing—original draft, review and editing. Project administration; A.J.-B.: Methodology, Investigation, Formal Analysis, Data Curation, Writing—original draft, review and editing; S.H.: Methodology, Investigation, Formal Analysis, Writing—original draft, review and editing; A.H.: Investigation, Writing—review and editing.

DATA AVAILABILITY STATEMENT
We have made the decision not to publicly archive the data (films, interview transcripts, observational notes) associated with this manuscript to retain the anonymity of participants in the study and comply with the original research consents. Each of the three films, however, has an individual data sharing agreement (with varying restrictions) developed and agreed upon by the young people. Please contact the corresponding author if you wish to view any of the three films.

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ENDNOTE
1 https://www.tcv.org.uk/greenGYM/

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SUPPORTING INFORMATION
Additional supporting information may be found online in the Supporting Information section.

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