

Reflection on research project

The following reflection will refer to a mini research project around the use of nature to help manage anxiety and wellbeing of special educational needs students. The reflection will be broken down into three main areas. Firstly, the alignment of the study will consider how my personal experiences influenced this project and how the philosophical paradigm of the post-positivist approach combined with the epistemological approach in the subjectivist zone was used to try to understand how different individuals perceive and manage their anxiety and wellbeing through nature. Secondly, commentary on the experience of conducting the study will draw upon the work of Fernández-Balboa and Brubaker (2012) on dimensions for self-reflection, considering the different elements of data collection and analysis for the mixed methods approach. Finally, I will discuss how the findings and process of the project will impact on my further studies and practice.

Study alignment

Armour and Macdonald (2012) suggest that our research interests are influenced by our personal background, interest and skills. This is certainly the case for me; I have worked in the outdoor industry with young people for over a decade, mainly with those with special educational needs and disability (SEND) of some variety. I too have a SEND diagnosis. Through my studies I have begun to understand some of my reasons for wanting to spend time in nature. My current work as a teacher in a special needs school has made me want to understand and help young people connect with nature, to help reduce some of the underlying issues that come with SENDs. Young people with SENDs can display challenging, disruptive and disturbing behaviour (Conner, White, Scahill and Mazefsky, 2020), this can be an indication of underlying issues such as anxiety and/or depression (Department for Education and Department for Health, 2015; Department of Education, 2021). Hebron and Humphrey (2014) found that young people with SENDs were at greater risk of anxiety, depression, anger and low self-esteem than those who did not have SENDs. These risks are exacerbated when a student has autistic spectrum disorder (ASD) (Hebron & Humphrey, 2014) and during late adolescence and early adulthood (Uljarević, Hedley, Rose-Foley, Magiati, Ying Cai, Dissanayake, Richdale and Trollor, 2020). I am interested in whether regular use of local nature-based spaces can have a positive effect on the levels of trait anxiety of students with SENDs and improve their mental health and wellbeing. This research design gave a voice to

the young people I work with while also allowing me to investigate this issue that I am personally and professionally invested in.

The philosophical paradigm chosen for this project was a post-positivist approach. I felt that this was a suitable paradigm as it implies that there is no universal truth (Panhwar, Ansari & Shah, 2017). This project is aligned with post-positivism as it is based on student self-reporting of anxiety and wellbeing; the aim of the project was to try to understand how spending time outdoors, in nature, affects a person's levels of anxiety and wellbeing, and these types of feelings are experienced in a personal way, as anxiety is a person's individual perception of the world and their ability to cope within it (Weinberg & Gould, 2011), which can impact on their feelings of wellbeing. In terms of my ontological approach, Weinberg and Gould's definition fits well with the relativist ontology, in that a person's anxiety reality, is constructed in their own mind and therefore there is no one truth, a person's reality is relative to their own experience of it (Moon & Blackman, 2014). The post-positivist approach also allows for the triangulation of both quantitative and qualitative methods, which gave me the opportunity to gather data through a broad and diverse manner, while giving it all value (Panhwar, et al., 2017). My epistemological approach was in the subjectivist zone, in that the focus on self-reported impact is interested in how individuals experience both their anxiety and their experiences of how spending time in nature can affect their anxiety levels and I am trying to understand how they perceive and understand their own realities in this context (Moon & Blackman, 2014). As this kind of research is a participatory action research (PAR) and is aimed at producing 'knowledge and action directly useful to a group of people' in order to 'empower people at a deeper level through the process of constructing and using their knowledge' (Nieuwenhuys, 2004, p. 210), I aimed to understand how different individuals perceive and manage their anxiety and wellbeing through nature, in the hope of better understanding its benefits and helping others (Armour & Macdonald, 2012).

Furthermore, designing it in this way with SEND student voices at the heart of the research was particularly valid, as it has been noted how little research has been done based on the experiences of SEND students (Li, Larsen, Yang, Wang, Zhai and Sullivan, 2019), even though these are some of the young people most in need of the potential therapeutic benefits of time in the outdoors (O'Brien, 2018).

However, I should have developed my research question further and done more structured planning for my individual follow-up interviews, as this would have helped me to maximise the impact of my research (Armour & Macdonald, 2012). O'Leary (2021) suggests that the development of a good research question is essential for reducing ambiguity, guides method selection and helps you to understand when you have found the answer. For example, having a more tightly focused question could have helped me to develop better questions for my interviews. While I knew I wanted to invite students to speak and explain how spending time in nature made them feel, to try to complement the quantitative written responses which were more narrowly focused on anxiety, I did not really understand what I was trying to gain or what areas I was trying to expand on from the questionnaires, which in turn limited the usefulness of the interviews as qualitative research. As advised in my proposal feedback, I needed to develop my question from a yes/ no answer. This would have really helped me during the interviews to develop more probing questions and therefore, get richer data. For example, I could have changed my question to “What is the relationship between regular use of local outdoor parks and trait anxiety levels and wellbeing in young people with SENDs?” and I could have developed some other subsidiary questions that would help me to answer my overarching one, which might have helped me to develop better questions for my interviews.

Experience of conducting research and lessons learned including ethical issues

Fernández-Balboa and Brubaker (2012) discuss the four dimensions for self-reflection, and I found myself in what they refer to as the *survival dimension* for much of this experience. When putting together my research proposal I was stressed and anxious. This is because I was overwhelmed by unfamiliar research terminology including the appropriate research paradigms, as well as the gathering and analysing of data (Fernández-Balboa & Brubaker, 2012). Therefore, as I have started to become more familiar with this new aspect of academic work, I have started to build confidence, alongside building on my knowledge, both in my chosen subject area and in research methods more generally (Fernández-Balboa & Brubaker, 2012).

One of the areas I have found challenging has been the data analysis programs, SPSS and NVivo. I used SPSS during my undergraduate research project, but this was under the guidance of one of my supervisors and I had little understanding of the meaning of the statistical analyses

that the programme was allowing me to access. So, while I may remember some of the terminology, my understanding level is of a novice. Furthermore, as I did not have a lot of data to input into SPSS it has made it harder to understand what the numbers mean and check which data analysis gives a meaningful result and which does not with such a small data set. While I have not been able to draw any clear conclusion from my data, it has helped me to understand the benefits and challenges of a mixed method approach.

I worked with NVivo to organise and summarise my qualitative data from the body maps and interviews. The rationale for this was to give an opportunity for the participants to describe, in their own way, how they were feeling both before and after spending some time in nature, and help me to understand the benefits of this kind of experience in the short and longer terms. I chose body mapping as a way of collecting data as I had seen it had been used in other research, with students with ASD e.g. Britton, Kindermann and Carlin (2020), who used it when working with young surfers. It has also been recognised as a good tool when working with marginalised and vulnerable young people, as it can offer a way of including groups of people with complex needs and cognitive disabilities, who may otherwise find it difficult to voice their views (Boydell, Collings, Dew, Senior and Smith, 2021). I think this was a valid choice but the issue was in my execution of the research, as only one student filled in a body map. This lack of engagement could have been partly because I did not push for a practice run at filling one in when I was asking the students to participate. I did offer, but the students declined, and this meant the students were fairly unfamiliar with the process of filling in the body map. Another reason may have been that I was not taking the students out for the walks myself. By not being involved in the walks, I hoped to limit my own biases surrounding the investigation and neutralise any power and position I had with the students due to my relationship with them as their teacher (Manion, Morrison & Cohen, 2018). There was also a logistical reason as I am only in school two days a week. However, all these reasons led to an under utilisation of the local parks and the body maps and I should have taken more ownership of the process and utilised my relationships to encourage students to participate.

Qualitative interviews provide a means, through dialog, to work toward making sense of and determining the meaning of specific events and experiences (Roberts, 2020). The use of interviews should have given me an opportunity to collect some rich data. However, I feel I missed a real opportunity to do this. I opted for a semi structured interview technique, hoping

that I would easily be able to develop my questioning from what my participants were talking about and using the body maps as a starting point for conversation. This did not go how I expected, and it was not at all easy, as highlighted by Roberts (2020). I have acknowledged that not having a sufficiently developed question was a hindrance in this area, but Roberts (2020) suggests that asking good questions and getting good answers is very difficult. She explains that to conduct good quality interviews that will contribute knowledge, the interviewer needs to be skilled, they need to have good knowledge about the topic, be familiar with the different methodological options and understand the conceptual issues of producing knowledge through conversation (Roberts, 2020). Therefore I still feel as though I am in the survival dimension as described by Fernández-Balboa & Brubaker (2012) because I have not developed these skills as yet, and this means I have found it difficult to align my interview technique with the methodology, goals and purpose of the project (Roberts, 2020). The questions I did ask only guided the participants to answers that confirmed my beliefs around the subject matter, which links back the development of a good research question and can be a problem for many novices who go into research with preconceived ideas (Armour & Macdonald, 2012).

The quantitative methods used in this study were the state and trait anxiety inventory (STAI) and the 14-item Warwick–Edinburgh Mental Well-being Scale (WEMWBS), and these are both valid and could help to understand the long-term effects of the project. However, having multiple ones acted as a barrier so I would change from using multiple questionnaires to one that could cover anxiety and mental health issues, such as the Revised Child Anxiety and Depression Scale (RCADS) and make sure that the link to this was in the consent form. This is because, while many signed the consent form, only half filled in the STAI and only one student filled in the WEMWBS questionnaire. By having one link I can make it easier for the participants to access the questionnaires.

During the research process I tried to be as ethical as possible. Manion, et al (2018) suggest that there are many ethical considerations when conducting research in education. When conducting the briefing with the young people, I included all the staff, and allowed them to understand what was being asked and took guidance on how best to keep the young people safe with their dignity intact, by not forcing or expecting them to participate. Informed consent was gained first from the institution and then individually from the students, after the purpose and what they were expected to do to take part in the project had been explained, they were also

reminded that they could stop taking part at any time (Manion, et al., 2018). While none of the young people who said they were willing to take part formally withdrew from the project, from talking to my colleagues it was clear that many of the students, when asked if they would go for a walk in the park would decline and go for their usual walk round the block. Therefore, I only asked those students I knew had spent some time in the park to fill in the post intervention questionnaires. I felt that this would help to maintain the dignity of those who had not taken their walks in a green space.

Implications for your future study and practice

A major lesson for future study is that I need to be the main facilitator of the project in terms of encouraging students to complete any relevant questionnaires and body maps. For my dissertation next year I hope to investigate the impact of outdoor learning/ forest school exposure on the students at the same SEN school. My head is supportive, and keen to introduce an outdoor learning/ forest school element into the school timetable, but to enable me to lead on the collecting of data, I plan to facilitate rather than lead the outdoor sessions, in that I will take the students out to a provider, that will allow the young people to spend time in and connect with nature. While this does not guarantee participation in the project from all that take part in the outdoor learning experiences, it will mean that one of the barriers is being removed. I will still be able to work closely with the providers when discussing the types and nature of the activities, to ensure that it is suitable for my students and provides the type of experience I want to research, so that they are not purely based in the algorithmic paradigm, which is problematic, as it is based on seeing the outdoors as an assault course (Loynes, 2002), but more as a place-based education (Wattchow & Brown, 2011). This links well with some of the underpinning theories such as Wilson's biophilia hypothesis (Gullone, 2000), attention restoration theory (ART) (Kaplan, 1995) and stress reduction theory (SRT) (Ulrich, 1981).

Ethically, by facilitating and not leading the sessions I can still maintain some distance and reduce the impact of my bias on the students (Manion, et al., 2018), while still allowing me to be close enough to students to make observations, and by asking the session leader to make time for data collection during the programme in the form of the body maps, which if handled correctly have great potential for some unique insights. Ethics play a role in the reason for using an outside provider too, as they will reduce risk factors through relevant qualifications,

insurance, safety equipment and risk assessments (Mansfield, 2020), and this will be needed for my more ambitious future study as forest school sessions entail more risk than the walks in the park used in this study.

I would change the methods of collecting the quantitative data, and use one rather than multiple questionnaires, as discussed above. A further reason to change is that they were not entirely suitable: the STAI is a valid questionnaire and does include high school students in its normative samples (Spielberger, 1983), but it is not designed for young people with special educational needs whose chronological age may not reflect their mental age. On further reading of the user guide for the WEMWBS, it is suggested that a minimum of 30 participants is needed to collect a sufficient number of data points to evaluate whether the project is successful (Warwick Medical School, 2020). My school does not have 30 students enrolled, so while this questionnaire might be good for the students I am working with, it might not generate meaningful data. On the other hand, I feel that the Revised Child Anxiety and Depression Scale (RCADS) could give me a broader understanding, as it is broken down into subsections that include Social Phobia, Panic Disorder, Major Depression, Separation Anxiety Generalized Anxiety and Obsessive-Compulsive (Chorpita, Ebesutani and Spence, 2015), many of which my student suffer with, meaning the questionnaire would capture more distinct aspects of the student experience, simultaneously giving me a more holistic understanding of the effect spending time in nature has on them, and the potential for granular detail on the impacts which could be related to particular strands of research.

For my own future practice as a teacher in the SEN school, I will continue to do as many of my lessons in local parks and green spaces as I can and will encourage my colleagues to do the same, especially as supervised walks to help students with self-regulation are very frequent, but have so far mainly been around the block in a built up area rather than in a green space. This study has confirmed my feeling that there are real benefits from spending time in nature, and some colleagues have anecdotally also made comments stating that they have noticed a change in student body language and demeanour in these green spaces, even when students have themselves not been able to articulate the impact, which has made me wonder if I could incorporate some element of teacher observation into my dissertation research rather than depending entirely on student self-reporting.

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