

RESEARCH CATEGORY: QUALITATIVE

ANALYSIS OF DEMOGRAPHICS OF A REGIONAL SCIENCE FESTIVAL AUDIENCE AND IMPACT ON PARTICIPANTS' SCIENCE CAPITAL

Project description and aim:

A university hosts a regional science festival every year; the event is a key part of the institution's public engagement activity. However, the event's impact on the young people attending in terms of STEM (Science, Technology, Engineering and Mathematics) knowledge and perceptions of HE (higher education) is unclear. The university has initiated research/evaluation studies aimed at investigating the impact of this event on young peoples' attitudes to science and HE.

Methods:

This mixed-methods research was conducted with three groups: school pupils, teachers and festival organisers. This case study focuses mainly on work with young people, as interviews with adults in professional roles provide fewer ethical challenges.

The young people in this research cohort were in Key Stage 2, aged 7–11. To gather their views, a group of researchers conducted online surveys with the school-registered children both before and after attending the festival. In addition, the researchers conducted a series of focus groups with young people in their schools to gain a deeper understanding of their views on science and education and how these were impacted by their visit to the science festival.

Key ethical considerations:

The children attended the science festival independently of the study; thus, ethical scrutiny focused on the study instruments (survey, interviews and focus groups). The study itself was considered low risk as it focused on what the pupils thought of the festival, what they had enjoyed and whether anything had made them think about what they might like to do in the future. All these areas were thought to be the kinds of discussions that children may have had at school as a result of attending the festival with their teacher. There was an additional time demand on pupils for completing the survey, being

interviewed or taking part in a focus group. Care was taken to minimise this time, and the study was conducted in a way that reduced disruption to the pupils' education. The study met the criteria of an 'audit'; nevertheless, given that it would be reported in general terms to the science festival's stakeholders, and potentially reported in academic publications, a standard process was used for ethical consent and care was taken to anonymise data for dissemination.

Schools were initially approached for institutional consent to conduct the study with their pupils at school. This included briefing teachers on how to support pupils and parents in giving or withholding informed consent.

The first, and most significant, issue to note is the importance of ensuring that parents and young people had clarity about what participation in the study involved and that they were able to give informed consent.

Written consent was sought only from parents. Due to the demographics of the area from which this research cohort was drawn, the researchers anticipated that some parents might have a first language other than English, and others might have low levels of literacy. It was important, therefore, to provide project documentation written in simple language and to achieve a suitable balance between the desire for simplicity and the need to fully explain the ethical considerations to participants.

The survey was conducted by the teacher in the classroom, and pupils were reminded that they did not have to answer every question.

Consent from child participants for the online survey was gathered through their submission of the survey. Here, given the power imbalance between pupils and teachers, the key consideration was ensuring that pupils were free to decide not to participate. The researchers ensured that the teacher made it clear to pupils that they could refuse to take part for any reason, or without giving a reason, and this was written in clear English at the beginning of the survey. Verbal active consent was sought from participants. The researchers also asked the teacher to ensure that an alternative activity was available for non-participants, to avoid classroom management issues.

For the focus groups, the researchers recorded oral consent at the beginning of the session and afforded participants the opportunity to leave and return to the classroom. The interviews and focus groups were conducted in public spaces around the school (e.g. the school library) and were audio-recorded on a password-protected, encrypted recording device. The recording was transferred to the university's secure OneDrive as an encrypted, password-protected file. The researcher/evaluator was skilled at conducting interviews and focus

groups with children and had an enhanced safeguarding check. Children and parents were given one week to withdraw from the interviews. Withdrawal from the survey or the focus group was not possible after the post-festival survey. Interviews and focus group recordings were transcribed and anonymised. After the post-festival survey had been completed, the pupil's identities were permanently deleted from the survey results.

Ensuring that both young people and researchers were comfortable during the focus groups was important. However, several unforeseen logistical challenges arose that the researchers had to address by improvisation; it would have been beneficial to have planned for these.

'In one example, during a focus group, the supervising teacher had to leave the room unexpectedly; during their absence, some participants became slightly disruptive, which impacted the comfort of others. In another incident, a young participant who was not a native speaker of English struggled to understand the researcher's questions. The difficulty was resolved by a bilingual pupil translating the questions and responses. Advance consideration of these types of situation might have brought a better outcome.'

The researchers also had to ensure that schools, as gatekeeper organisations, understood what was involved for staff and pupils participating in the research project. If research is conducted on the premises of an organisation, it is common practice that consent be obtained from a member of the senior leadership. Due to the school's responsibility for the children's welfare,

Senior Leadership Team (SLT) consent to the study was sought and obtained. Consent was also obtained from SLT to approach teachers as participants; this was needed because the study was directly linked to their employment in the school.

The researcher/evaluator conducted a post-study debriefing session online with the teacher to discuss any issues that might have emerged.

Scientific limitations and recommendations for future research:

- Ensure that information sheets are accessible to adults with low levels of literacy and to non-English speakers, while still conveying key messages about the purpose and methods of the survey and what consent entails.
- When interviewing/surveying primary-school children, prepare a simple explanation about what you are doing and what will happen to the data they provide.
- When teachers are involved in administering surveys ensure that power imbalances are taken into consideration and pupils know that they are free to withdraw. Make sure they can withdraw without feeling uncomfortable and without this creating classroom management issues.
- When visiting schools to conduct research, discuss SLT expectations of what the event will involve, ensuring it aligns with your own understanding, including:
 - Expectations around supervision of the session by staff
 - Practicalities, such as whether some children involved may likely have limited English.
- Consider whether consent from organisations, such as schools, needs to be sought for the study to go ahead.

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