Doing Participatory Research Within Diverse Locations: Conducting Collaborative Enquiry Into Complex Environments Using Digital Technology

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Discipline

Education [D2]

Academic Level

Intermediate Undergraduate

Contributor Biographies

**Lee Hazeldine** is a senior lecturer and research fellow at Canterbury Christ Church University. He has more than 20 years teaching experience within a range of education sectors. He has recently worked as a learning consultant and provided guidance and training on good teaching and learning practice. He has particular expertise in technology-based learning.

**Christian Beighton** has been teaching since 1991 in a wide variety of higher education (HE), further education (FE), and private settings in the United Kingdom and abroad. Working across many teacher education and research-related programs, his professional interests include neo-materialism, creativity, and developments in HE practice and provision. He currently works in HE in the United Kingdom with roles in researcher development and doctoral supervision in areas ranging from Q methodology, Critical Race Theory, and sociomaterial analyses to Professional Development, arts-based practice research, and sociolinguistics.

Abstract

This case study discusses how participatory research methods can be used to develop understanding of learning environments in higher education contexts. It focuses on how participatory methods can be enhanced by digital technology which can inform us about the relationships between learning and the higher education environment. Based on a research project in a UK university, the project investigated the learning experiences of trainee teachers and followed three stages. In the first stage, geolocation digital technology was used to guide trainee teachers to locations where they addressed site-specific activities that considered how environments outside the classroom make effectively contribute to learning. In the second stage, the trainees developed teaching resources based on this experience. In the third and final stages, trainees reflected on the whole process and how it might facilitate pupils’ learning in the future. Digital data from each stage were collated online and used by the researchers to stimulate reflection about longer term professional development in these settings. This case study provides an overview of the project and discusses the design of the research, considering how digital technology can be effectively used within the context of a participatory research study. It highlights the benefits and limitations of such a methodology and describes the lessons which be learned for future projects.

Learning Outcomes

By the end of this case, students should be able to

* Identify the features of a participatory approach to research in higher education settings
* Describe how participatory approaches can contribute to our understanding of complex environments in qualitative research
* Discuss how digital technology can contribute to both the collection and the analysis of complex data

Case Study

Project Overview and Context

This project aimed to develop techniques of participatory research first used in a previous project which used digital technology to examine the role of space and environments in the learning processes of higher education (HE) students ([Hazeldine et al., 2019)](#bib4" \o "bib4). The geography and location of a learning environment can either expand or limit a student’s learning [(Austin, 2007](#bib0); [Knight, 2013](#bib5)). We wanted to explore how an experiential relationship to locations might stimulate trainee teachers’ curiosity and engagement with education and how this might affect their teaching strategies when engaging with pupils’ learning beyond the narrow confines of the classroom and curriculum.

The project was conducted with 115 undergraduate trainee teachers at the start of an academic year. Trainee teachers were put into groups of five and were asked to explore the city of Canterbury via a range of locations. The students were given the following objectives:

* Find out more about Canterbury
* Consider the learning potential of locations
* Explore how your personal experiences might afford learning opportunities for pupils

A participatory research methodology was used because the research required participants to provide their own subjective responses to complex environments, including deciding on which strategies might be most useful to engage learners with a space. The equitable, democratic nature of participatory research allows for such qualitative responses from participants to be made, allowing participants to become active researchers and decision makers throughout the research process.

To conduct this research, the potential of online digital technology was used. Digital technology provides an effective means to facilitate participatory research across a range of locations—its capacity to traverse both space and time, allowing the sharing of information in synchronous and asynchronous ways, affords a flexible, collaborative experience that is accommodating to individuals’ unique pace of engagement and focus of interest ([Downes, 2012](#bib1); [Gubrium et al., 2017)](#bib3).

It was hoped that by capturing these singular encounters through digital technology, the researcher/participants would gain insights into the ways learning occurs within complex environments and how this experience might affect participants’ strategies when providing learning opportunities for their pupils in the future.

These considerations led directly to the design of our research project, outlined in the following.

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| **Section Summary**   * Participatory research is a qualitative methodology that provides a democratic and equitable approach to research. * Participatory research is useful when ownership, agency, and decision making is required from participants. * The use of digital technology within research affords a flexible, collaborative experience which allows participants to engage in ways that suit their individual needs and pace of involvement. |

Research Design

The design of this participatory research required careful consideration of three things: clear research methods to effectively collect relevant and purposeful participatory data, a coherent structure to be implemented with a digital interface to allow the data to be successfully collected, and an exploration of the ethical issues relevant to the study.

Considerations for Effective Participatory Research Methods

The research project required participants to explore environments outside of the classroom and consider how they might affect pupils’ learning and the teaching strategies used. To achieve this, trainee teacher participants needed opportunities to reflect on their experiences within the environments and provide responses as to how they might influence the teaching strategies they might use in the future. As such, a qualitative participatory research methodology was needed. Participatory research can be defined as “communities of inquiry and action [that] evolve and address questions and issues that are significant for those who participate as co-researchers” [(Reason & Bradbury, 2008,](#bib8) p. 1); it is therefore an equitable, democratic research method orientated toward action and change—in the case of this study, this manifests itself through the objective of allowing trainee teachers to reflect upon their practice and identify how environments beyond the classroom might alter teaching strategies used and the learning process for pupils. Participatory research is distinct from other qualitative research methodologies in that it does not follow a hierarchical approach in which the researcher chooses the focus for the types of questions and responses that a participant gives within a study; it therefore provides greater freedom and control in which to allow participants to express their thoughts and facilitate actions outside of a prescribed framework [(Greenwood & Levin, 2007)](#bib2). In this research study, it was important that participants had the opportunity to reflect upon experience and offer their own strategies and perspectives, as such, a large degree of freedom and control was needed in which to allow participants to share their views. The research undertaken hoped to provide a space in which participants could collect information, reflect on their experience and take action in the form of strategies for the future; in turn, these strategies could be implemented, explored, and evaluated in which to enact further action—participatory research methods are particularly relevant here in that they provide a “cyclical process of fact finding, action, reflection, leading to further inquiry and action for change” (Minkler, 2000, p. 191).

All stages of this research study were constructed with the idea that the traditional role of the lead researcher—that which defines the research focus and questions, as well as analyzing and ascertaining the impact of data—is transformed to that of the curator, an agent that hosts each stage of the research and facilitates the stimulus to be explored allowing participants an equal opportunity to decide on the direction of the research and types of actions to be undertaken—at no point does the role involve dictating the direction and outcomes of the project.

The participatory research methods for this study were designed to maximize participants’ opportunity to share their experiences, thoughts and ideas without unnecessary influence and direction from other research agents. The instructions provided during the initial introduction of the project and those apparent on arriving at the given research locations were of an open-ended exploratory nature that did not restrict the focus of participants’ responses. For example, on arriving at a particular location, the trainee teachers were asked to explore what aspects they felt defined the location and what stimulus was there to generate curiosity and learning; the participants were also asked what pedagogic strategies they felt might be relevant to engage pupils within the environment. In each case, the focus for the participants’ subjective response was not laid out in advance, the participants were researchers that had equal opportunity to share their ideas, and orientate the research in different directions.

After participants had submitted their research data in response to a location, a method was required to allow them to share their ideas and evaluate responses in which to decide on those strategies and actions going forward. The design therefore provided a provision in which the contributions of participants were available within a shared forum for discussion. This was achieved by generating an online submission space within the digital research interface that then fed to a shared digital community wall that allowed the trainee teachers to discuss and evaluate their experiences and strategies. The outcomes of this equitable discussion were then distributed to the participants for the next stage of the research project.

Implementing an Effective Digital Research Interface

When planning to incorporate the use of a digital interface within a research project, it is very important that a clear structure is defined at the outset, failure to do so might generate difficulties at a later stage—subsequent alterations to the composition, operations, and functions of your digital architecture often requires, at best, making difficult revisions, at worst, building the design from the very beginning again. When considering the structure, it was decided that the interface should include four key pages within its structure: a consent, introduction and instructions; map; and help page. The ethics page addressed ethical issues of consent and confidentiality and informed participants that by undertaking the tasks within the interface they thereby gave consent to use data they provided—the page also drew attention to the fact that participants had the right to opt out by not undertaking the research activities. The page also informed participants that their identity would remain anonymous, although any data given might be used within the public realm, whether in the form of publication or conference presentation. The introduction and instructions page clearly described what the research project was about and gave instructions on how to use the interface; it also described what content can be found on each of the pages within the interface. The map page incorporated a bespoke Google Map with the key locations labeled in advance; upon arriving at one of the given locations, the content would then change according to the place in which the participant arrived. Given that participants within this study were required to respond to given locations, it was important that each location was identified with clear tasks to consider in which to elicit a response to the research objectives—as previously indicated, these tasks were of an exploratory nature allowing participants to contribute open-ended responses. Consideration was given to how these responses might be uploaded into an online environment—the media that was uploaded could be easily imported into NVivo in either video, audio, or pdf text format in which to allow any transcription and analysis to occur.

Finally, the help page included both a problem-solving section and a live discussion feed; the former listed useful solutions to potential difficulties that might occur using the interface, while the latter provided a means to communicate with the lead researcher if any further queries were needed—this manifested itself in the form of an embedded discussion forum.

Careful consideration was needed when selecting suitable digital technology to ensure that data were effectively collected to inform our participatory research. As such, a range of interfaces were evaluated with regard to their capacity to meet our expressed research objectives. After evaluating the options, we decided to use Adobe Collaborate because it allowed information to be responsive to particular geolocations, while allowing participants to collaborate through their active contributions and sharing of information. The chosen platform also allowed participants to capture research outcomes in a range of multimodal forms, including visual (photo/film), auditory, and textual content. Another important factor to consider was the accessibility of the interface—the decision to use the chosen application was informed by the fact that it allowed content to be visible on most smartphone devices.

A Consideration of Ethical Issues

The design of the research required a careful consideration of ethical issues and informed consent. An information paper was distributed to participants at the start of the research study outlining what the aims, purpose, and objectives of the project were. During the introduction to the project, it was made clear to the participants that they could opt out at any time during the research process and by submitting their contributions to the digital interface they consented to having their anonymous data available for either publication or presentation within the public realm. The consent details upon the interface made it clear that all data submitted would be anonymized to ensure confidentiality—the consent page of the interface included a facility for the participant to enter their name and select an option to indicate that consent to participate within the research and have data published was given.

Additional ethical considerations for this study included the clarification of collective rights and mutual obligations—unlike other forms of research, the role of participant/researcher in any participatory research requires greater responsibility on behalf of the participant. It was therefore especially important to set out the project aims and objectives and highlight the collective obligations and responsibilities in advance for all those involved in the project—this information manifested itself in the form of a code of conduct which was also included within the consent page.

Given that participants were going to orientate themselves around a range of environments, a risk assessment was also conducted to ensure that all selected locations were sufficiently safe in which to conduct research.

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| **Section Summary**   * Participatory research is open-ended and cyclical in its design, allowing opportunities for participants to contribute their thoughts and evaluate outcomes in which to equitably influence the direction of the research process. * The design of digital resources for research should be clearly structured in advance to ensure efficacy and usability. * The design of digital resources for research should be mindful of participants’ access to relevant technology. * Researchers need to be mindful of collective rights and mutual obligations when considering ethics and a code of conduct for participatory research. |

Research Practicalities

There was a range of practical considerations to be made in which to carry out this participatory research effectively. First, the inclusivity of the research resources and processes had to be considered—this required examining the profiles of the trainee teacher participant/researchers prior to the project. If the participatory research was to be truly equitable, then the digital interface and the locations explored needed to be accessible to all participants—this required including both written and auditory instructions within the interface, as well as ensuring that the chosen environments were still accessible for participants with any mobility issues. Checking that all participants had access to relevant technology was also a practical consideration which often required that participants were arranged in groups in which at least some had sufficient technology to ensure that the digital resources performed efficiently and effectively.

Second, given the democratic nature of participatory research, it was important to ensure that all participants were aware of their mutual responsibilities within the project to ensure that all voices and contributions had a right to be heard; this required ensuring that a democratic ethos and code of conduct was apparent in the instructions given to participants, as well as the mode in which interactions took place between research agents and the digital interface itself. In practice, this required ensuring the host to the research process reiterated the code of conduct at review points within the study, ensuring all voices had a chance to be heard during both the evaluation process and the points at which future research actions were decided. The form in which contributions were shared and discussed were also non-hierarchical, allowing all participants to have the opportunity to show their thoughts and comment on the ideas of others. A final practical consideration regarding the code of conduct was to highlight the importance of respecting the public while conducting research within public spaces—this required (a) indicating that any group research activity should not unreasonably disrupt the public’s habitual routines and (b) that any filming and photography that were considered necessary for research did not include members of the public.

Third, given that research/participants were independently conducting research at a range of different locations, help had to be available remotely—this was to ensure that participants received timely guidance with regard to technical problems and carrying out the research objectives; it was also important in which to keep participants safe in relation to the risks identified upon the risk assessment.

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| **Section Summary**   * Participatory research must be inclusive if it is to ensure that participants’ voices are to be equitably heard. * Participants need to be aware of their mutual obligations throughout the research to ensure the study remains democratic in nature. * Support mechanism and a rigorous risk assessment are needed if research is to be carried out in a range of complex spaces in which a range of factors cannot be controlled. |

Method in Action

In practice, most of the objectives of the research were effectively met—trainee teachers navigated to different locations indicated upon the given map and reflected on how their experience of the environment might affect learning and teaching strategies used outside the classroom. However, there were several issues that became apparent during the research.

Although the participants were placed into groups of five for pragmatic purposes, this had some detrimental effects. First, it became clear there was often a lack of consensus of what ideas and strategies were worth sharing within a research group; subsequent discussions with individual participants during the review stage often highlighted that there were unresolved tensions between group members. This could have been resolved through discussions with group members prior to the sharing of outcomes. Second, there was a tendency for those participants with the best technology to lead the research process—this was partly due to the fact that recording of the environment and proposed teaching responses was done via the devices at hand, as such, those with the best-equipped technology tended to dictate the content. These issues underscored the potential tensions of implementing a participatory research method within a group environment—the democratic aspirations of the method can risk being compromised by an underrepresentation of less prominent voices, as well as a lack of access to relevant resources required to make voices heard effectively.

The open-ended nature of participatory research, as well as the geographical gap between groups within this study, generated an issue in terms of the quality of research outcomes. In some cases, submissions from participants in certain locations lacked rigor or insight—the geographic distance between researchers often fettered the chance to challenge participants’ engagement, this is something that might have been addressed with the opportunity to debate in situ. In other cases, the open-ended character of research activities affected the focus and precision of participant engagement, and this made discussions around strategies difficult because some outcomes lacked clarity. This might have been resolved by offering some guidance on minimum expectations from research participation.

During the review of research responses, it was also clear that the role of host was still tainted by notions of being a lead researcher—there was a tendency to lead the discussion by referring to what was found interesting within submissions. Although all participants had the opportunity to discuss their findings and proposed strategies, much of the discussion was weighted toward areas outlined by the host—this raised issues about power relations and the assumptions often made by a researcher in relation to both the research and the participants’ viewpoints.

The efficacy of online technology also generated problems for some participants. The help forum included many comments and queries from participants whose devices failed to present relevant information within arriving at certain locations—this was often due to the geolocation features being turned off within their devices, as well as problems regarding bandwidth and network issues associated with particular providers. This could have been resolved by allowing participants to check the technology on their devices prior to the study.

These issues highlight the pros and cons of both participatory research, as well as the potential risks involved in using digital technology for field work investigation. Whereas participatory research allows greater agency to participants in terms of research perspectives, outcomes, and actions, it is often subject to covert power dynamics that affect the possibility of providing an equitable voice to all involved (Kothari, 2001). It is therefore important to recognize the democratic ethos of participatory research and be conscious of your obligation to let other voices have an equal say in the direction the research might lead.

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| **Section Summary**   * In open-ended qualitative research processes, it is often wise to provide guidance on minimum expectations of engagement in which to ensure effective outcomes. * Researchers need to recognize their equal role as participant/researchers if participatory research is going to be effective in giving an equitable voice to all. * Although participatory research gives greater agency to participants, caution is needed is which to avoid the influence of hidden power dynamics * Research technology should be thoroughly checked prior to the research process to ensure the participation of all. |

Practical Lessons Learned

Conducting participatory research using digital technology needs careful consideration of a range of factors. Prior to executing the research, the researcher must be mindful of the technology typically available to participants—failure to do so may cause a disparity in participants’ level of engagement with the project. The digital research resources can then be modeled around the available technology.

To avoid problems with the digital resources, which often lead to a frustrating experience for the participants, it is important to check that all facets and operations within your design function correctly—it is worth asking colleagues to test the design in advance, this will allow you to address any issues with the design prior to it being used within the selected research environment. Given that participants are not likely to have access to person-to-person guidance when using the technology, it is important to provide helpful instructions and, ideally, a means to communicate with researchers if participants have any queries about the research or using the resources.

Careful consideration should also be given to how a digital resource collects participants responses; ideally, responses should be given in electronic formats that allow researchers to efficiently identify common themes and threads throughout the research—in our example, responses to both the research environments and the review of the project could be downloaded into a pdf document format that could be uploaded to NVivo, a common software package used for collating and examining qualitative research.

Participatory research is a democratic, often cyclical process in which participant researchers have agency over the outcomes, actions, and direction of the research, as such, it is important to ensure that open-ended opportunities are provided to allow participants to make qualitative responses and that all participants are allowed to reflect on the responses and outcomes of the research—these opportunities can manifest themselves in the form of a range of questions or activities that require a qualitative response, as well as group review periods that allow participants to collectively evaluate the work and decide on appropriate actions moving forward. If using digital technology, participation can be made truly equitable through the facility of multimodal response mechanisms—this allows participants to response to the field through a range of media that suits their needs, this includes image, video, auditory, and textual form.

If participants are expected to be responsive to complex environments in participatory research, careful consideration should be made to ensure that these environments are accessible to all in which to guarantee that there is equitable opportunity to make qualitative responses to the locations. As such, chosen locations should be risk-assessed in advance to highlight any issues and take appropriate actions to resolve them in advance of any field work.

In addition to the typical ethical considerations of a research project (transparency, minimizing risk and harm, protecting the rights and dignity of individuals, attaining informed consent), it is also important to provide clear guidance on the collective rights and mutual obligations for each participant within a participatory research project—this ensures the democratic integrity of a study in which all voices have a right to be heard. Such guidance should be given to participants at the start of the project and should be reiterated with task instructions and review periods. In relation to this, mindful consideration should be given to what would normally be considered the role of the lead researcher—when doing participatory research, this role should now be understood as a host or facilitator of the research project, ensuring that democratic and equitable decisions are made throughout the research process.

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| **Section Summary**   * Digital research resources must be accessible to all participants and provide an effective means to share data with researchers for analysis. * Participatory research requires the provision for open-ended, qualitative responses that allow all to share their ideas, evaluate outcomes, and decide on future actions. * The collective rights and mutual obligations of participants need to be regularly reiterated to ensure a democratic process is upheld. |

Conclusion

This research project was successful insofar as it achieved its objectives—researcher/participants were able to reflect upon how different environments might stimulate learning, as well as and consider how a range of pedagogic strategies might engage pupils’ learning beyond the narrow confines of the classroom. A participatory research methodology was necessary to achieve these objectives in that it allowed opportunities for participants to provide their own subjective responses and decide on the direction of strategies to be used in the future.

Although the use of digital technology provided an effective means for capturing data, it did pose a range of challenges in terms of accessibility for participants. These challenges provided insights on how to more effectively implement digital research in the future: all participant devices needed to be checked in advance in which to allow everyone to engage in ways that suit the own needs using a variety of multimodal formats.

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| **Section Summary**   * Research outcomes were met due to a participatory research methodology that allowed collective decisions to be made and subjective responses to be shared. * Although digital technology provides an efficient method for collecting data in diverse ways across a range of locations, careful consideration needs to be given to accessibility in the future. |

**Classroom Discussion Questions**

1. What were the main features of the participatory research approach used in this study?
2. In what ways can the potential of digital technology be useful within participatory research?
3. Why is it important to ensure all participants know their mutual obligations during a participatory research study?

**Multiple Choice Quiz Questions**

Why were participatory research methods used for this study?

1. they provided controlled research conditions to ensure a clear focus
2. they maximized the agency of participants throughout the research
3. they allowed the lead researcher to control key decisions throughout the process

Correct answer: b

Which term describes the nature of participatory research?

1. democratic
2. hierarchical
3. structured

Correct answer: a

Which of the following words describes the process undertaken in participatory research?

1. lineal
2. cyclical
3. reductive

Correct answer: b

Further Reading

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Web Resources

British Education Research Association (BERA): https://www.bera.ac.uk/

Forum: Qualitative Social Research: http://www.qualitative-research.net/index.php/fqs

National Foundation for Educational Research: https://www.nfer.ac.uk/key-topics-expertise/research-methods-operations/qualitative-research/

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