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Inclusive research in education: From power dynamics to data equity

Elke Emmers[1]
UHasselt School for Educational Studies, Hasselt, Belgium

Nicky Daniels
UHasselt Centre for Environmental Sciences, Hasselt, Belgium

Liesbet Saenen
Katrien Hermans
Luciano Pirson
Merel Vaes
UHasselt School for Educational Studies, Hasselt, Belgium

ABSTRACT

This methodological and theoretical article addresses the need for more inclusive research methods in educational research. Traditional research methods often neglect the perspectives of underrepresented groups. Involving participants as co-creators of knowledge leads to research and output that are not only more relevant and equitable but also contribute directly to more inclusive practices. The article examines both the theoretical foundations and practical applications of inclusive methods, focusing on the role of data equity, open science, and the challenges posed by power dynamics in research settings that frequently impede the participation of underrepresented groups. It critically reflects on and discusses how inclusive methods can effectively address these inequalities, particularly in education. It became clear that a paradigm shift is necessary to place inclusivity at the core of educational research, highlighting the importance of closer collaboration among researchers, policymakers, and practitioners.

Keywords: Inclusive research design; Participatory research; Data equity; Open science; Education.

1. Introduction

The aim of this article is to cast a methodological lens on the importance of inclusive research design (i.e., research that is conducted 'with' individuals rather than 'on' individuals), with an emphasis on thorough analysis and attention to implementation in educational research (Seale et al., 2014). This is particularly important in the light of promoting participation in research as well as linking to Open Science (i.e., a broad approach to research that prioritises transparency, cooperation, and accessibility) as a global frame of reference for researchers (Serbe-Kamp et al., 2023). Although it is a methodological paper and contains aspects of a discussion paper, such as reflection on challenges and power relations, its main focus is methodological, with a clear explanation of why inclusive and participatory approaches can be used in educational research.

Research and education have been closely intertwined for years, as evidenced by numerous publications across various topics (Seale et al., 2014), within different educational research streams, and presented at different educational research conferences (e.g., AERA, ECER, EAPRIL). However, these studies often have in common that they study school systems concerning students, teachers, or other stakeholders but rarely involve the stakeholders themselves (CohenMiller, 2018; Dunn & Mellor, 2017; Vaart et al., 2018). This limitation in the research design, due to the absence of certain key voices, majorly challenges the

[1] Contact address: elke.emmers@uhasselt.be

generalization of research findings and the ability to build comprehensive support for change as it only captures part of the picture and thus missing pieces of the puzzle to build support for change.

Participatory research already addresses this to some extent by, for example, actively involving working with so-called participants and emphasising collaboration to bring about change through research (Coe et al., 2021). However, this approach often falls short. It remains a top-down approach in which power differentials between researcher and participant persist, as has frequently been addressed in critical race theory, feminist theory, and disability studies (Thambinathan & Kinsella, 2021). Therefore, the question of why to conduct truly inclusive research remains unsolved. Essentially, in power dynamics, one must take into consideration the distribution of power among researchers and participants in order to ensure equitable participation and influence. This calls for instruments to effectively manage and reduce power imbalances, as well as ethical frameworks and participatory methods (Green & Johns, 2019; Pratt, 2019).

Inclusive research methods address this gap by ensuring that the voices and perspectives of all stakeholders are heard, which can lead to more valid findings by providing a fuller and more nuanced understanding of the research question (Cook-Sather, 2006). By treating all voices equally, these methods contribute to more equitable educational practices and promote equity and justice (Thambinathan & Kinsella, 2021). Moreover, they compel researchers to critically reflect on their own assumptions and biases, thereby enhancing research quality (Coemans & Hannes, 2017).

There has been an increasing search for research techniques that view participants as experts and involve them as co-researchers. This began with initial studies such as those by Walmsley and Jonhson (2003), wherein participants were no longer seen as mere research objects but were actively engaged as equal researchers throughout the entire process, from idea generation to design and full implementation. This included research methods such as action research, community-based participatory research, or even autoethnographic research (Johnson & Walmsley, 2003). In the following years, this approach extended to research with people with learning disabilities, reflecting the idea of 'nothing about them, without them', as demonstrated in Nind's (2017) research. According to Seale et al. (2014), the experiencers themselves co-lead a range of research approaches under the umbrella of participatory, emancipatory, and decolonised research, which includes inclusive research.

In summary, inclusive research is a paradigm in research methods about giving a voice to those who are often unheard or whose voices are underrepresented, in the pre-, during, and post-research phases. Central to this approach are data collection methods that are also based on inclusion and empowerment to neutralise power dynamics and promote equal participation (Cahnmann-Taylor & Siegesmund, 2017). In reality, however, believing in this inclusive paradigm is not enough; doing this in a rigorous methodological way is rather complex.

The core principles of inclusive research design consist of four key elements (Seale et al., 2014). The first principle concerns *participation*, where co-creation, equity, and empowerment are central. This involves participants as equal partners in designing and shaping the research and empowers them as members of a particular underrepresented group. Secondly, the principle of *equity* is based on data equity and knowledge sharing, where data is collected and analysed without reinforcing inequalities and where results are shared in an accessible and understandable way. Third is *transparency*, with the aim of openness and accountability in choices and decisions throughout the research process. Finally, there is *reflexivity*, which involves the critical reflection of research on its own position and should be an iterative process in which findings are adapted and adjusted through new insights and feedback.

In an inclusive research design, the participants, who are often referred to as co-researchers, should be part of every stage of the research process (Pope, 2020). Participants who are involved as co-researchers tend to have a greater sense of ownership and engagement in the research process, which can lead to more meaningful and applicable outcomes (Mey & Van Hoven, 2019; Pope, 2020). They should actively contribute to the design of the research, actively participate in the collection and analysis of data, and play a role in co-authoring the final report. Ideally, then they have true co-ownership of the research process and outcomes. This requires methodological changes and a shift in the researcher-participant relationship to foster collaboration and trust (Mey & Van Hoven, 2019; Pope, 2020).

Inclusive research methods align research more closely with the realities of educational practice and the needs of students, teachers, and other stakeholders. By ensuring all voices are heard and including different

perspectives, researchers can contribute meaningfully to improving educational practice and making the education system more equitable and effective. Effective equity, diversity, and inclusion in education require the involvement of all stakeholders, including institutions, faculty, and students. This collaborative approach enhances open educational practices and the co-creation of resources that consider cultural, linguistic, and locational diversity (Iniesto & Bossu, 2023).

It starts with inclusive ideation. At the outset of a (project - or research) proposal, it is essential to ask the obvious questions, such as: Is this research question relevant in our context? Are the right questions being asked at the beginning of the design? Have all stakeholders been involved in the design of the research? This could include initiating research focused on a specific underrepresented group or developing a research design from a scientific perspective with stakeholders involved and integrated in the research team from the beginning to writing the proposal (Coemans & Hannes, 2017).

Furthermore, it is important to use data collection methods that are closely aligned with the four principles of inclusive research design mentioned above. Data collection techniques that quickly emerge are arts-based research methods such as photovoice (Wang & Burris, 1997), photo elicitation, walking interviews, story baskets, and so on (Emmers, 2019). These data collection techniques facilitate the empowerment of both participant and researcher through the collaborative research and reporting process. However, achieving a truly inclusive research design requires more than just adopting these techniques, as this paper aims to make clear.

In the final phase of research, the issues of analysis and data reporting often arise. While these tasks are typically seen as the researcher's 'core business,' there are strong examples of inclusive research where co-researchers (help to) conduct the analysis and then also (help to) ensure the data is reported both scientifically and to the broader public or community (Seale et al., 2014). Nonetheless, achieving this level of inclusivity still presents significant challenges.

2. Methodology in inclusive research: Challenges and considerations

Unfortunately, theory and practice are not always aligned, which can lead to several systemic flaws in methodological implementation (Rovio-Johansson, 2019). Firstly, a form of “sham participation” is possible, where participants or user groups are consulted while a research plan is already being drawn up (Kingston et al., 2023). Still, they do not actually co-write the research proposal or design. This often occurs because the time for writing is very limited, or there are no resources to involve large groups of participants at this stage. Surely the empowerment of researchers themselves in the process of inclusive research design also plays a role: Do researchers have sufficient knowledge or experience of how to work effectively with participants without compromising their aims or methods, and are they certain about how to involve them meaningfully (Andress et al., 2020; Parkin, 2004). Therefore, researchers could expand their training in implicit bias, positionality and structural competence, power dynamics, and related concepts to address this (Andress et al., 2020). Secondly, participants are often engaged in data collection, believing that 'collaborating with peers will foster greater trust or openness', but this is again a form of sham participation as they are only 'engaged for their personal characteristics' and not for their expertise as experts by experience. As a result, they are usually not involved in the analysis, which we still often refer to as the 'added value of a researcher', while feminist and decolonial research movements have certainly already demonstrated the opposite (Thambinathan & Kinsella, 2021). On the other hand, this also shows that the use of inclusive methods requires specific knowledge and skills on the part of the researcher, such as the ability to be (culturally) sensitive and to work with diverse groups, which is not always evident. Thirdly, participants seem to be mostly presented as reporters of the results, while they do not really own them, which is very much at odds with the emancipatory approach of inclusive research. Inclusive methods often raise complex issues such as the fact that power imbalances may still exist (researchers having more control), whether informed consent should be modified in terms of ownership and authorship, potential risks of exploitation such as academic profit taking precedence over participants' needs, and of course the fundamental question, "Who owns the data?" (LCRDM, 2024).

To counter these systematic methodological errors, inclusive research is best grounded in the seven principles of data equity to consciously address power, bias, and discrimination in research design (Vaart et al., 2018), data collection, data analysis, and data reporting (and ultimately data availability) (Gonzalez et al., 2022).

Data equity principles seek to ensure data are meaningful, accessible, and actionable for communities too often left out of data-driven decision-making processes (Gonzalez et al., 2022, p. 254). In short, these seven data equity principles described by Gonzalez et al. (2022) entail the following:

1. Employ ethical behaviour: respect the rights of data providers, promote equity, and minimise harm by evaluating practices to prevent reinforcing inequities or causing harm to marginalised groups.
2. Privacy protection: safeguard the privacy of individuals, recognise their ownership of data, and ensure secure and appropriate access.
3. Disaggregate data: analyse data by breaking it down into relevant characteristics to reveal hidden disparities and monitor progress effectively.
4. Understand context: examine the social and historical factors that contribute to inequities, identifying root causes rather than symptoms.
5. Question methods: critically evaluate and diversify data collection and analysis methods to avoid perpetuating biases and power imbalances.
6. Inclusive visualisations: create data visualisations that are accessible, culturally sensitive, and do not reinforce stereotypes.
7. Engage communities: involve community members as data experts, ensuring their voices shape equitable data practices and decision-making processes.

Inclusive research that emphasises data equity often encounters several methodological challenges and other barriers. For example, funding bodies may hesitate to support participant-led data collection due to concerns about training, data quality, and outcomes (Salway et al., 2015). Even when such research is funded and conducted according to inclusive standards, publication can be delayed or complicated by prevailing preferences for conventional research methods (Vayena et al., 2016).

This requires crossing the boundary between research and research management. For years, these research managers and research support offices have been promoting and fostering Open Science, which is directly related to inclusive research (Fox et al., 2021; Gonzalez et al., 2022; LCRDM, 2024). It concerns transparency, accessibility, and sharing research results with a broader audience, often referred to as Citizen Science, a branch of research that seems to get funded very quickly and very often (Serbe-Kamp et al., 2023). Perhaps inclusive research as a research design needs to be rebranded because this concept is closely linked to inclusive methodologies, as it opens up research results to everyone, regardless of social or economic background.

Open science emphasises the importance of transparency, the act of sharing knowledge, and fostering inclusivity within the research community. Transparency involves rendering research visible, while sharing aims to enhance the accessibility and usability of that research. Inclusivity in research involves engaging and acknowledging a broader range of contributors, guided by key principles within the framework of RDM.

The main principles of Open Science include Open Access (OA), which ensures that research publications are freely available to all, without a paywall. It also involves Open Data, where research data is shared in a structured and accessible way so that others can work with it, including the participants themselves. Open Science also relies on open source, so that software and tools used in research are made public so that others can use and improve them, or the use of non-proprietary software throughout the research process. To enable replication and verification, open methodology is essential. This makes the peer review process of scientific articles more transparent, thereby improving the quality of research (Foster & Deardorff, 2017).

3. Open science and inclusive research: Synergy in practice

So, there is a clear synergy between open science and inclusive research design. The principles of open science are closely aligned with them. Underrepresented groups often have limited access to traditional research results and data (Dai et al., 2018; Thambinathan & Kinsella, 2021; Vaart et al., 2018). Open Access and Open

Data make it easier for them to participate in the knowledge production process. Moreover, opening up research data and outputs can help to include more diverse perspectives and contribute to the broader dissemination of knowledge (Seale et al., 2014).

Table 1. Principles of Open Science and their relation to Inclusive research design

Principle Open Science	Link to inclusive research design	Explanation	Data equity principle (Gonzalez et al., 2022)
Open Access	Participation, Knowledge Sharing	By making research publications freely accessible, knowledge is shared with a wider audience, including underrepresented groups.	Principle 1: Ethical behaviour ensures that Open Access respects the autonomy, dignity, and well-being of marginalised communities, preventing harm.
Open Data	Data-equity, Participation	By sharing research data, researchers can collaborate on new insights, and underrepresented groups can analyse their own data.	Principle 2: Ensuring appropriate ownership and access respects individuals' privacy. Principle 3: Disaggregating data helps uncover hidden disparities in priority communities.
Open Source	Participation	By making software and tools publicly available, researchers can collaborate, and underrepresented groups can contribute to the development and improvement of (new) tools. Yet, this should not be limited to the publication of open source software. The use of open source packages/software throughout the research process also contributes to the replicability of research, as it is then more accessible to repeat certain analyses, for example (and one does not need a specific license).	Principle 7: Culturally responsive engagement with communities fosters the equitable use and co-creation of tools and technologies.
Open Peer Review	Transparency, Equity	Making the assessment process more transparent brings new voices into the assessment process and reduces the likelihood that certain perspectives will be underexposed.	Principle 5: Critically examine assumptions and biases in peer review to promote diverse, equitable input in decision-making.
Open Methodology	Transparency, Participation	By making methods public, researchers can replicate their work, and participants can better understand how the research was conducted.	Principle 4: Understanding the social and historical context of disparities ensures that open methodologies address root causes of inequities rather than perpetuate them.

It takes three to tango. The table above shows how the principles of open science work together with inclusive research practices and data equity to ensure a fully inclusive research approach. Successful inclusive research necessitates the establishment of a triangle that incorporates the principles of open science and data equity. Each of these dimensions is critical for creating research that is both open, equitable, inclusive, and focused on reducing inequalities.

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4. Future directions for addressing methodological challenges in inclusive research

There are still many challenges to truly implementing inclusive research designs, as outlined above, such as power dynamics in different stages. There is, for example, a need for honesty, transparency, and acknowledgement of contributions, as stated by Walmsley (2004). But also, in terms of publication. Using inclusive research methods can provide a unique and innovative view of the topic under investigation by not stating and using conventional or standardized methods such as questionnaires. Although these methods seem (could be viewed by reviewers as) exploratory, how these are implemented can prove to be different by embracing open science practices and good research data management practices for qualitative and naturally occurring data. For example, is Open Access truly inclusive if it is mainly determined by those who can pay to publish through APCs? There are barriers to Open Access because of the high costs associated with publishing in Open Access journals (APCs). This is a barrier for researchers from less well-funded regions or disciplines who may be excluded from the benefits of Open Access. In addition, Open Access requires a subscription to the journal, so end-users may not always be able to access a paper if it is not Open Access. This double door often remains closed or creates inequalities in access. For truly inclusive research, there is an urgent need for inclusive/alternative funding models to reduce this inequality (Shieber, 2009). In addition, within open peer review, power dynamics could influence who reviews and whose perspectives are heard, because to qualify as a reviewer, you need to have published a lot or be a well-established author in your field. Therefore, ensuring that a diverse range of reviewers are involved is also very important in this principle, in order to reduce power inequalities and include a wider range of perspectives. In addition, there is a need to maintain a dialogue about the validity of inclusive research designs. Thus, we continue to recognise the different forms of validity that are required for inclusive research to be meaningful (Seale et al., 2014).

5. Conclusion

Inclusivity, data equity and open science are thus not only ethical imperatives, but also necessary for truly impactful and equitable research. Collaboration among researchers, policymakers, and practitioners is essential to ensure that inclusive research leads to real-world change and addresses inequalities effectively. As discussed in previous sections, co-creation and shared ownership in research processes are critical for achieving these goals. Let this critical methodological contribution be a recommendation for how inclusive research design can be further integrated into academic institutions, with a particular focus on teacher education and the broader educational sciences. By embracing inclusive research design, academic institutions can foster a culture of equity, transparency, and participatory engagement that benefits both research and educational practice.

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