



Educational Design Research

Volume 10 | Issue 2 | 2026 | Article 106

Contribution Editorial Article

Title [Design-Based Research as a Research Approach for Inclusive School and Teaching Development](#)

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Abstract Design-Based Research (DBR) has been associated for many years with the claim to closely interlink scientific knowledge generation and concrete innovation processes in educational contexts. In the field of inclusive education, which is characterized by high complexity, normative frameworks, and ongoing transformation pressure, DBR seems to be particularly suitable for jointly designing development and research processes with practice-partners. This Special Issue addresses this interlink and examines how design-based research can contribute to inclusive school and teaching development—and where its current limitations lie.

Keywords Inclusion, design-based research, school development, inclusive education

DOI <https://doi.org/10.15460/s0gwc662>

Citation Reh, A., Schmalenbach, C. & Schroeder, R. (2026). Design-Based Research as a Research Approach for Inclusive School and Teaching Development. *EDeR – Educational Design Research*, 10(2), 1-8.

<https://doi.org/10.15460/s0gwc662>

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Design-Based Research as a Research Approach for Inclusive School and Teaching Development

Anne Reh, Christine Schmalenbach, René Schroeder

1.0 Introduction

In DBR projects aim, through their innovative character, to further develop school and teaching practice and proactively design it in collaboration with practitioners under consideration of specific contextual factors (Bakker, 2019; McKenney & Reeves, 2019). Both inclusion and DBR are based on the idea of the most extensive possible participation of the involved actors in the collaborative design task to be solved. A specific context is to be optimized based on jointly developed objectives for improvement, i.e., future-oriented forms of education (McKenney et al., 2023). The iterative-circular research process of DBR corresponds to a process-based understanding of inclusion. A constant striving for the development of inclusive structures, cultures, and practices (Booth & Ainscow, 2019) can be met through the various iteration loops in DBR (McKenney & Reeves, 2019). A continuous development in the sense of improved educational opportunities are jointly shared objectives. Inclusion represents, beyond the individual institutional educational context, a cross-system design task (Kroworsch, 2023; Norwich, 2023). DBR can therefore be used to produce overarching insights into successful inclusive school and teaching practice. However, these potentials are so far only partially reflected in concrete research projects. Design-based inclusion research is only slowly beginning to develop (Schroeder & Reh, 2023), and this requires both further methodological and methodological clarification and intensified research activities.

From the postulated fit between DBR and inclusion research, various questions arise regarding theoretical, methodological, and research-practical aspects, which are to be addressed within the framework of the Special Issue:

- How can DBR be used to develop innovative approaches to inclusive school development, and what specific challenges arise in this context?
- How can research-practice-partnerships (RPPs) in DBR with different actors (e.g., teachers, students, parents, school administration, ...) be designed?

- What strategies and methods are necessary to successfully scale the results of DBR projects up and implement them in various regional contexts?
- To what extent can the findings from DBR projects contribute to the sustainable improvement of inclusion in schools, and what role do political and institutional framework conditions play in this?

2.0 Overview

The opening contribution to this Special Issue is by **Mel Ainscow**, who provides a historically grounded overview of central developmental lines of design-based inclusion research. He reflects, based on his own projects, how joint research work, RPPs, and design-based inclusion research can contribute to innovative results and sustainable implementation and improvement of educational practice.

In the second article, **Anne Reh**, **René Schroeder**, and **Nina Kelm** describe how inclusion, innovation, and participation influence and condition each other in the context of inclusion-oriented school development and the research on it. It becomes clear that DBR offers a helpful framework in which all three aspects can be considered and synergies can arise.

Most of the subsequent contributions in the thematic issue focus on teaching and school development processes in inclusive contexts. What these works have in common is that they use DBR as a tool to address concrete development concerns on site—for example, to design inclusive learning environments, to professionalize educational actors, or to further develop school structures. Thus, the contributions impressively demonstrate the strength of design-based research: its proximity to practice, its iterative logic, and its connectivity to real school development processes.

Verena Letzel-Alt and **Nele Groß** describe in their article, with a focus on aspects of professional development, a project in which, in cooperation with different teachers, a concept for establishing peer-supported learning in schools was developed, implemented, and evaluated in its initial versions. They particularly address the relevance of low-threshold and flexible communication options, and further training offers in cooperation.

The next four articles describe projects from the field of teaching development.

In their contribution, **Citka Ashouri** and **Christine Schmalenbach** report on a study of collaboration between researchers and practice partners such as teachers and students within a DBR project on self-regulated social-emotional learning. The results impressively show that this cooperation holds potential but also challenges, which are particularly articulated in the framing, subject-specific, and emotional aspects of collaboration. The systematic integration of students, carried out in the sense of inclusive teaching development, requires

clear framework conditions and trusting relationships. Based on the findings obtained through ethnographic approaches, the study provides valuable design recommendations for future science-practice cooperations and underscores the importance of these for participatory-oriented teaching research.

Winnie Karen Giera presents three evaluation and (re-)design phases of a theater project to promote reading skills and address the topic of "bullying" with students in different educational settings. Children and adolescents were included in the evaluation based on quantitative questionnaires about their assessment of the project. The author compares the framework conditions and cooperation formats with educators in the various cycles of the project.

Taha Ertuğrul Kuzu and **Lea Schäfer** show in their contribution to inclusive teaching development how DBR as a research methodological approach can be used for the consistent participation of learners in the process of iterative revision of an inclusive learning environment. Features for the diversity-sensitive design of multilingual cards for use in inclusive teaching are tested and further developed in dialogue with the learners in two development cycles, resulting in an innovative, multilingual-promoting product. The project presented provides both impulses for designing a cyclic innovation process as part of inclusive teaching development and highlights specific participation opportunities for students within DBR.

Michael Schlauch combines in his contribution two aspects central to design-based inclusion research: Methodological-methodological questions of the transferability of locally acquired knowledge on inclusive practices are linked with the goal of deriving conditions to support cooperative learning in diverse learning groups in the form of overarching (didactic) design principles for digital storytelling. Through the analysis of learning interactions with learners from Germany, Italy, and Portugal, insights into important design features are gained that support participation in the digital learning environment and the process of story development. Under the premises of participatory teaching development, a proposal for integrating learners into the design process is developed here with the framework model Varied-Level Anchors for Participation (VAPs), which establishes close connecting lines between the demands of participation, innovation, and inclusion.

From a superordinate perspective of inclusive school development, **Christian Reintjes**, **Till-Sebastian Idel**, **Carolin Baumgarten-Kelm**, **Nina Heilemann**, **Franziska Reinisch**, **Gabriele Bellenberg**, and **Marcel Veber** explore in their contribution the innovation potential of Design-based Research in the context of the project "DigiSchuKuMPB – Digitalization-related and digitally supported school (culture) development Multi-professional cooperation in all-day elementary schools". A cooperative school development process at all-day elementary schools is initiated and accompanied research-methodologically via a framework concept oriented towards DBR. The focus here is on the innovation of collaborative practices through the provision of digital tools. Various actor perspectives are integrat-

ed participatively to identify central development themes and thus provide impulses in the sense of inclusive school development. The contribution discusses the potentials of the chosen approach using DBR in the presented research project and asks about the challenges of science-practice cooperation.

In addition to addressing different facets of school and teaching development, the contributions to this Special Issue also provide a comparative perspective regarding the actors involved in the respective DBR processes. Some of the contributions presented here address a specific, but particularly relevant desideratum for questions of participation in the context of inclusion. So far, the perspectives of participating children and adolescents in DBR projects have been rarely included. However, in this Special Issue, we see different approaches to giving them the necessary space: from quantitative questionnaires to assess the project (Giera) to explicit involvement of learners in material development (Kuzu & Schäfer) and revision (Ashouri & Schmalenbach) via interactions in teaching and/or additional focus group interviews. The perspective of learners is thus actively integrated into the process of DBR. Further, broader forms of student participation in the process are conceivable and should be tested and reflected in future DBR projects.

At the same time, the overall view of the contributions shows that DBR projects with a focus on inclusion so far remain predominantly limited to a local level. Questions of scaling up, transferability, and systematic integration into superordinate educational policy or administrative structures are addressed only partly and are not yet at the center of research practice. It is also noticeable that most projects are generically designed and operate hardly at the level of subject didactics. This points to a so far largely untapped potential of design-based inclusion research, which could lie in the connection of subject-specific teaching, didactics, and inclusion and thus can build on didactic research traditions (Gravemeijer & Cobb, 2006; Prediger, 2022; van den Akker, 2013) in the context of DBR.

The concluding contribution by Reintjes et al. examines school development processes from a superordinate perspective. This contribution simultaneously marks a transition from local project logic to questions of organizational and systemic development and thus addresses central desiderata of the thematic issue. The contribution by Reh, Schroeder, and Kelm also provides a framework model to critically reflect on and conceptually further develop questions of innovation and participation within design-based research against the background of inclusive school development concerns.

Overall, the Special Issue shows that design-based research in the context of inclusive education is gaining in importance and is increasingly used in a differentiated manner. At the same time, the Special Issue makes it clear that further conceptual, methodological, and research-practical clarifications are necessary—particularly regarding scaling, sustainability, power and participation issues, as well as the stronger connection of subject didactic and inclusive pedagogical perspectives. The thematic issue therefore does not see itself as a

conclusion, but as an interim status and impetus for design-based inclusion research that is still in the process of constituting itself and takes the claim of inclusive education seriously: to jointly, participatively, and context-sensitively further develop education.

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Journal Details

EDeR – Educational Design Research
An International Journal for Design-Based Research in Education
ISSN: 2511-0667
uhh.de/EDeR
#EDeRJournal (our hashtag on social media services)

Published by

Hamburg Center for University Teaching and Learning (HUL)
University of Hamburg
Schlüterstraße 51
20146 Hamburg
Germany
+49 40 42838-9640
+49 40 42838-9650 (fax)
EDeR.HUL@uni-hamburg.de
hul.uni-hamburg.de

In collaboration with

Hamburg University Press
Verlag der Staats- und Universitätsbibliothek Hamburg –
Landesbetrieb
Von-Melle-Park 3
20146 Hamburg
Germany
+49 40 42838 7146
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