Bridging the gap between theory and practice with the dual-focus approach of Design-Based-Research

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The integration of research and practice continues to be a fundamental component of meaningful progress in the ever-changing field of education. The transformative potential of Design-Based Research (DBR) as a methodology that harmonizes the rigors of academic inquiry with the practical needs of the field is demonstrated by our thematic issue on "Bridging the gap between theory and practice." DBR seeks to benefit researchers as well as practitioners by occupying the space where theoretical frameworks and practical issues converge (Schmiedebach & Wegner, 2021).

Design-Based Research stands out due to its iterative, collaborative methodology. DBR promotes a symbiotic relationship between researchers and practitioners, in contrast to traditional research paradigms that frequently create a dichotomy between them. In order to co-design interventions that are both theoretically and practically sound, researchers collaborate with educators, legislators, and other stakeholders (Design-Based Research Collective, 2003). Through co-creation, the developed solutions are made to be even more relevant and applicable by being firmly grounded in the field's contextual realities.

Generating useful innovations that can be directly tested and put into practice in real-world environments is one of DBR's main goals. By doing this, DBR overcomes the drawbacks of strictly theoretical research, which could have trouble making a lasting impression on practitioners. Continuous feedback and adaptation are made possible by the iterative cycles of design, implementation, analysis, and refinement that are at the heart of DBR. This dynamic process produces insightful information about the fundamental ideas of educational practice in addition to improving the intervention itself.

DBR provides a strong framework for investigating and verifying educational theories in the field for researchers. DBR's iterative process makes sure that theoretical presumptions are continuously examined and improved in light of empirical data. Theories are grounded in actuality through this rigorous

Citation: Schmiedebach, Mario, & Wegner, Claas. (2024). Bridging the gap between theory and practice with the dual-focus approach of Design-Based-Research. *Global Education Review*, 11 (2), 1-3.

testing process, which strengthens and expands their applicability. Furthermore, the collaborative nature of DBR facilitates researchers' comprehension of the opportunities and practical limitations in educational settings, resulting in more impactful and nuanced research outcomes (Design-Based Research Collective 2003). DBR offers practitioners practical solutions that are suited to their particular situations. Practitioners' participation in the research process guarantees that the design and execution of interventions are informed by their knowledge and perspectives (Anderson & Shattuck 2012). This leads to more effective and sustainable practices that are readily adoptable within their unique settings. Furthermore, the iterative feedback loops in DBR empower practitioners to continuously improve their strategies and approaches, fostering a culture of evidence-based practice and reflective improvement.

As we delve into the articles featured in this issue, we come across a wide range of DBR applications in various educational settings. Every study demonstrates how theoretical insights can be smoothly integrated into the framework of real-world interventions, capturing the collaborative spirit of DBR. These contributions demonstrate the adaptability and significance of DBR, from augmenting STEM education through creative curriculum designs to integrating children's rights in the educational context of Religious Education.

In conclusion, Design-Based Research is a potent paradigm for assisting in the transition from research to practice. DBR promotes meaningful change in educational practice in addition to advancing academic knowledge through collaboration, iteration, and prioritizing practical relevance. The integration of DBR holds promise for developing educational environments that are both theoretically informed and practically effective as we navigate the complexities of 21st-century education.

We invite you to explore the diverse and insightful contributions in this issue, each offering a unique perspective on how DBR can enrich both the academic and practical dimensions of education. Through this collective endeavor, we aim to inspire ongoing dialogue and collaboration, driving forward the shared mission of improving education for all.

Description of the special issue

The second part of the special issue aims at broadening the view on DBR research. Especially the use of DBR in different subject and research areas is highlighted in the three different articles. Dumcke et al. investigate the potential of bystander cardiopulmonary education in high schools in their study “Current motivation, self-efficacy, cognitive load, and hands-on performance of students participating in two bystander-cardiopulmonary education models: A comparative interventional study.” Since time is always scarce in education, the authors decided to compare two different approaches to teaching basic life support to students. On the one hand, they integrated their intervention into subject-matter teaching and, hence, included it in a longer teaching sequence; on the other hand, they offered their intervention as a project activity, isolated from the regular subject-teaching. The authors present their research findings and highlight the possible advantages and disadvantages of both types of interventions. Furthermore, they even show how both kinds could be integrated into an exemplary curriculum and, thus, highlight the teaching-related output essential for DBR research.

In their study, "Developing a Diagnostic Instrument for Scientific Giftedness in the Context of Design-Based Research (DBR)," Peperkorn and Wegner show how DBR can be used to develop a diagnostic instrument for scientific giftedness. Therefore, they use DBR from a different perspective: they still have a dual-focus on both research and practice; however, they focus more on the scientific dimension and a scientific-relevant output in terms of a valid test instrument. At the same time, the authors show how scientific giftedness effects teaching and how this test instrument could be used in the practical field as well. Therefore, this article emphasizes possible critics of DBR and shows how this approach can actually be used for research without developing and improving teaching interventions, but rather as a scientific test instrument.

Fleischmann integrates the entire DBR process in her study "Design-Based Research for Integrating Child Rights Education into Religious Education in Germany" by portraying the different cycles of designing a teaching module on how Children's Rights perspectives can be integrated into Religious Education, evaluation and reflection of the intervention, and how the implementation and dissemination of the intervention can successfully happen. The study shows that DBR is an ultracomplex process with iterative cycles of designing, testing, evaluating, reflecting, and implementing in order to fulfil the dual-focus DBR aims at. The author highlights in her study how that dual-focus is related to a dual-output concerning both teaching-related materials and also a scientific dimension regarding the broadening of knowledge.

References

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