

The SERP Approach to Problem-Solving Research, Development, and Implementation

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Executive Summary

The Strategic Education Research Partnership (SERP) is committed to generating lasting improvements in educational practice by introducing a model of the relationship between researchers and practitioners that radically departs from prevalent notions of “translational research,” “research into practice,” or “applying basic research.” SERP’s partnership model acknowledges and draws upon the expertise of practitioners at all stages of the work, is directly responsive to urgent problems of practice, embeds the work in school settings, and engages designers who can shape knowledge and ideas into tools for experimentation, evaluation, and use at scale. At the same time, the model maintains a commitment to generating genuinely new knowledge.

The SERP model is anchored by an investment in the creation of long-term “field sites:” ongoing, structured partnerships with school districts that allow the locus of the research and development enterprise to shift to practice settings. The stability of a field site allows the norms and routines of collaboration to evolve with experience and become deeply rooted over time. And the location of the work inside a school district allows attention to research and development to extend to implementation. The sustained interaction across institutions, we believe, will elevate the importance of problems of practice, generate new knowledge about teaching, learning, and the organization of schools, produce new tools to instantiate that knowledge in practice, and support sustainable educational improvement.

SERP has created a model for field site partnerships that promotes responsiveness to problems of practice by allowing school district leaders to define the focal problem, and by convening regular meetings among district leaders and SERP leaders in order to align

expectations and steer the work. The model promotes interdisciplinary collaboration, recruiting researchers from multiple universities and fields of study to address varied dimension of the problem. It promotes effective problem solving by incorporating designers who attend to the needs of users (students, teachers, or administrators), and the demands of designing for scale. And it promotes the generation of new knowledge by facilitating and supporting the efforts of accomplished researchers who have agreed to do research related to the problem identified by the district.

We make three claims about the ways in which the SERP partnership model changes the nature of the work that emerges, with justifications for the claims rooted in experiences to date.

Claim 1: The SERP field site structure changes both the agenda for collaborative work, and the products that emerge. This claim is supported by two examples in which the research, development, and implementation (RDI) priorities emerged directly from collaborative discussion, and were influenced in distinguishable ways by the structured engagement of researchers and practitioners. The first case is the design of the Word Generation program, a cross-content area literacy program that is simultaneously designed to incorporate research knowledge about students' literacy development, and to address multiple demands of content area teachers requiring time use and subject-relevant activities. The program achieves the balance by providing daily experiences for students that build their academic vocabulary through reading, writing, and discussion. But each teacher has responsibility only one day a week, and the time demands—particularly in math and science class—are limited to 15 minutes a week.

The second case is the design of AlgebraByExample, a program that builds on a solid knowledge base regarding the effectiveness of interleaved worked examples. Worked examples

are correct or incorrect (clearly labeled as such) solutions to problems, and students are asked to explain why the solution works or doesn't work. The research literature demonstrates that when students are given problem sets that interleave worked examples with problems to solve, learning is improved. The AlgebraByExample project design –42 assignments that map onto every topic in Algebra 1 – is responsive to the tension between senior administrators who demand improvements be integrated into the regular curriculum, and the demands of algebra teachers that their routine practice not be upended. In both cases the design emerged from multiple partnership meetings in which the approach to solution was negotiated among contributors with varied needs, perspectives and expertise.

Claim 2: Interdisciplinary collaboration allows for a multi-pronged approach to a problem that promises more coherent and effective problem-solving over time. SERP's field site partnership with the Boston Public Schools (BPS), it's longest standing collaboration, points to the affordances of interdisciplinary approach and sustained attention. BPS's request for support with middle grades students to improve their ability to comprehend their texts led to simultaneous development of the Word Generation program by one team, and of the Reading Inventory and Scholastic Evaluation (RISE) by another team. The assessment results indicated that, contrary to teachers' beliefs, a significant portion of middle schools students (between a quarter and a third of all students in some schools) still struggled with basic reading challenges. These are students reading below the level targeted by Read 180, the primary intervention available to BPS schools at that time. A new line of work was begun in the SERP site to develop a program to address the needs of these students: the Strategic Adolescent Reading Intervention (STARI).

STARI, Word Generation, and the RISE assessment have all interacted in ways that promote coherence at the school and student level. For example, the population of students performing significantly below grade level must be differentiated for placement into the STARI program. Middle grades students reading at the second grade level (too low for STARI) must be distinguished from students reading at the 4th grade level (the STARI target group). The SERP collaboration allowed for a revision in an otherwise well-functioning RISE instrument in order to distinguish these groups reliably.

And Word Generation and STARI have incorporated common features that allow for more coherence across the school day. Both programs incorporate discussion and debate, and make use of high-information passages that are rich in background knowledge. Both intentionally build perspective-taking exercises into the curriculum. For STARI students who have a great deal of ground to cover to catch up with students who are on grade level, this coherence is likely to be particularly beneficial. These synergies emerged because the field site structure allowed for a sustained, mediated, problem-solving collaboration across three research institutions and a school district.

Claim 3: Sustained interaction creates an opportunity to engage in developmentally challenging work that could not be taken on in a new partnership. In the longest standing partnerships (with BPS and SFUSD), initial instructionally-focused work broadened to include organizational challenges over time. In Boston, work on school coherence became increasingly important to the partnership work, and years into the collaboration, it was incorporated into the professional development for Word Generation.

In the San Francisco Field Site the focal problems initially pertained to mathematics and science instruction. But as the work matured, more systemic questions regarding the channels for communication from the district central office to the classroom, and from the classroom back to the central office emerged. After five years of collaboration the two kinds of concerns intersected in the form of the “5x8 card,” a tool for principals that helps to focus their attention on the targeted instructional practices when they visit classrooms.

We argue that the affordances of the SERP model speak to the need for an investment in the infrastructure to support sustained collaborations that cross institutions. One can point to many cases in which researchers and practitioners have engaged in herculean efforts to work together to good effect. Clearly it can be done. We argue it can be done more regularly, efficiently, and effectively, however, if an intermediary organization takes on many of the challenges of establishing and maintaining the collaboration from the participating researchers and practitioners, and builds the knowledge base and capacity to support productive collaborations.

Building design capacity is particularly important to problem-solving research-practice partnerships, and that capacity does not typically reside in either universities or school districts. While design in the DBIR acronym refers to a type of research, in the SERP model design is a creative enterprise that requires a set of skills, processes, and procedures aimed at revealing the needs and responses of the users and the demands of the context that do not reliably characterize efforts led by researchers working in universities. In this respect as well, the efforts of both researchers and practitioners can be made more powerful with structured organizational support targeted to maximizing the effectiveness of their contributions.

The end goal in the SERP case is not a better model of research, but rather a better approach to solving critical problems of practice in which researchers and research knowledge play a major role. Success of the SERP model requires, without question, researchers who are committed to DBIR. But it also calls for an infrastructure to enhance the productivity of those willing to make the commitment, to sustain their commitment over time, and to attract the interest and build the capacity of others to join the enterprise.