Digital System Design for Strategic Improvement Planning in Education: A Socio-Technical and Iterative Design Approach

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Abstract : Educational systems seek reform using data-intensive continuous improvement processes known as strategic improvement plans (SIPs). Schools turn to digital systems to monitor, analyze and report SIPs. One technical challenge of these digital systems focuses on integrating a highly diverse set of data sources. Another challenge is to create a learnable sociotechnical system to help administrators, principals and teachers add, manipulate and interpret data. This study explores to what extent one particular system is usable and useful for strategic planning activities and whether intended users see the benefit of the system achieve the goal of improving workflow related to strategic planning in schools. In a three-phase study, researchers used sociotechnical design methods to understand the current workflow, technology use, and processes of teachers and principals surrounding their strategic improvement planning. Additionally, design review and task analysis usability methods were used to evaluate task completion, usability, and user satisfaction of the system. The resulting socio-technical models illustrate the existing work processes and indicate how and at which places in the workflow the newly developed system could have an impact. The results point to the potential of the system but also indicate that it was initially too complicated for use. However, the diverse users see the potential benefits, especially to overcome the diverse set of data sources, and that the system could fill a gap for schools in planning and conducting strategic improvement plans.

Keywords : continuous improvement process, education reform, strategic improvement planning, sociotechnical design, software development, usability

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