

## **Designing for Scale: How Relationships Shape Curriculum Change**

Paper presented to the annual AERA meeting April 13-17, Vancouver  
Division L: Educational policy and politics; Section 3: curriculum testing and instructional practice

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### **Abstract**

This study explores how large scale innovations can achieve alignment between curricular components through interactions among various system actors. Eight successful large-scale curriculum innovation projects were analyzed. Six key themes emerged from interview and document analysis data. Three themes related to salient relationships -i.e. strategic partnerships with (local/national) organizations; identification of individuals acting as linking pins; teacher involvement in design. Three other themes pertained to the relationships' maintenance -i.e. visible presence; aligning goals; acknowledging the complex and interpersonal nature of relationships. Findings suggest that attending to relationships (professional and personal; strategic and unplanned; formal and informal) should be a key consideration in shaping the process of designing large scale curriculum innovations, and offer examples of how this has been accomplished.

### **Purpose**

The last two decades have witnessed a rebirth of large-scale curriculum reform across the globe. Alongside renewed reform efforts, an increase has been noted in scholarship related to the understanding of the complexity behind the implementation and sustainability of large-scale curriculum innovations (cf. Fullan, 2009; Geijsel et al, 2001; Chatterji, 2002). Increasingly, experts call for better consideration of the educational system as a whole to inform the *design* of large-scale innovations (cf. Fullan, 2000; Earl et al., 2003).

The field of educational design is rich with literature on the design of instruction (e.g. Gustafson & Branch, 2002), courses, (e.g. Posner & Rudnitsky, 2005) and programs (e.g. Eisner, 2001). Such resources can offer outstanding guidance for the design of products to be used by learners, teachers or both. However, most of these focus on designing for discrete settings, as opposed to providing guidance for widespread use. As such, the

existing body of educational design literature is lacking when it comes to guiding the large-scale design of curriculum materials and frameworks (cf. Burkhardt, 2009), which require attention to (a) the broader system in which the design will function; (b) implementation and diffusion from the inception of the design; and (c) uptake in heterogeneous settings.

The present study begins to address the above mentioned lacuna. With the ultimate aim of distilling essential elements to be integrated into a framework for understanding large-scale curriculum design processes, this study features retrospective analysis of the design trajectories in prominent projects leading to large-scale curriculum change. This paper reports on the first phase of analysis, which focused on understanding relationships among key players.

## **Perspectives**

Traditionally, curriculum deliberations have focused on the aims and content of learning. Building on broader definitions (Walker 1990) and typologies (Klein 1991), van den Akker (2003) emphasizes both the interconnectedness of curriculum components and the vulnerability of the structure that connects them. At the hub of his model is the rationale, which connects all the other components: aims and objectives, content, learning activities, teacher role, materials and resources, grouping, location, time, and assessment. He uses a spider web metaphor to emphasize that, within one curriculum, component accents may vary over time, but that any dramatic shift in balance will pull the entirety out of alignment. Though it may stretch for a while, prolonged imbalance will cause the system to break. Efforts to reform, (re)design, develop, or implement curricula must therefore devote attention to balance and linkages between these components.

Educational systems are large and complex; few are well-suited to coordinating balance and linkages between curricular components during the design of large-scale curriculum change. This is due, in part, to the fact that different groups of people are responsible for shaping different components. The broad aims and objectives of curriculum are generally mandated by policy makers, and content-specific refinements are decided upon by educational and subject matter specialists. Learning activities are shaped to some extent by individual schools, teachers and learners, but also largely by textbooks writers and producers of the resources used. The way teachers enact their role is mostly influenced by personal conviction and skills as well as by their own pre-service and in-service education. Grouping, location and time are steered in part by the cultures and beliefs of individual

teachers and schools, but also by regulations and how their implementation is monitored by the inspectorate. Examination writers play a powerful role in shaping curriculum through the (formative) assessments they create. Finally, each of these groups is subject to the influence of researchers, media, and the general public.

Maxims like those put forth by Stenhouse ("There can be no curriculum development without teacher development" [1975]) and Burkhardt ("What you test is what you get" [1987]) attest to the notion that the outputs produced by different actors must be aligned. It is commonly acknowledged that interactions among the different groups who are influential in shaping curricular components are complex and can change depending on the particular context and time (cf. Marsh, 2009). Therefore, research is needed to inform large-scale curriculum design endeavors about how to coordinate the work of various system actors, such as those described above. This study seeks to understand how balance and linkage between curricular components can be achieved through interaction among system actors. By means of retrospective analysis of successful curriculum innovation projects aimed at (potential) large scale implementation, answers are sought to the following questions:

- Which relationships were particularly salient and why?
- How were these relationships initiated and sustained?

## **Methods**

The retrospective analysis was conducted through an explorative multiple case study approach (cf. Yin, 2003). Eight curriculum innovation projects intended for (potential) large scale implementation were purposefully selected. Projects were selected to represent three common types of initiatives: research and development projects, national reform efforts, and school-based responses to national reform. In addition, variation was sought in terms of subject area, educational level and country. Table 1 presents an overview of the projects studied.

Table 1. Overview of projects

<b>Project Name</b>	<b>Country</b>	<b>Type of initiative</b>	<b>Educational Level</b>	<b>Subject Area</b>
<i>River City</i>	USA	R&D project	Secondary education	Science
<i>SimCalc</i>	USA	R&D project	Secondary education	Mathematics
<i>Twenty First Century Science</i>	United Kingdom	National reform	Secondary education	Science
<i>Assessment is for Learning</i>	Scotland	National reform	Primary and secondary education	Cross curricular
<i>Nature, Life and Science</i>	The Netherlands	School-based responses to national reform	Secondary Education	Science
<i>Gifted Students</i>	The Netherlands	School-based responses to national reform	Primary Education	Cross curricular
<i>Mother tongue and Math</i>	The Netherlands	School-based responses to national reform	Primary and secondary education	Mother tongue and Mathematics
<i>Subject renewal in science and math</i>	The Netherlands	School-based responses to national reform	Secondary Education	Science and Mathematics

### **Data sources and analysis**

Data were collected by means of document analysis and semi-structured (telephone) interviews with project leaders from the eight selected projects. Document analysis included scientific literature, evaluation/technical reports and projects' websites. Initial contact with project team representatives also included the request for additional documentation that our search may have missed. Semi-structured interviews focused on the relationships each project maintained with various actors from the educational system, as well as on the activities that initiated and sustained these relationships. The interviews lasted 60 to 90 minutes and included ten open questions. The first three questions focused on the identification of those relationships that were particularly salient. The remaining seven questions focused on the strategies and/or activities that contributed to initiate and/or sustain these relationships. All interviews were audio-recorded and then transcribed for further analysis.

Findings from both the document analyses and the interviews were combined for each project. Data were analyzed by means of constant comparison (cf. Goetz & LeCompte, 1981). Themes emerging from each case were sought and then compared and contrasted

across cases. Throughout this process, themes were refined, merged or divided into smaller themes.

## **Results**

### *Salient relationships*

Three key themes emerged from data analysis relating to the salient relationships identified by project leaders. A first key theme concerns the proactive establishment of strategic partnerships with (local/national) organizations. Such partnerships are regarded by project leaders as important to facilitate implementation and scaling up of curriculum innovations for several reasons. First, they can enable spread, by helping with the recruitment of schools and with various project-related activities such as the provision of professional development and support. Second, they give a “local presence” and legitimacy to the project by involving organizations that are regarded as legitimate, familiar and accessible to schools and teachers. This was explained by one project leader as follows, *“They were in that region...people who were implementing [the innovation] might meet at this support agency and talk about their experiences. So it gave us a kind of a local presence that we would not have had otherwise.”* Finally, in national reform efforts, such partnerships help to demonstrate a shared commitment towards a particular direction of change.

The second salient relationship refers to the identification of individuals within partner organizations who act as “linking pins” and project champions. As stated by a project leader, *“The individuals that happen to be involved from different sites can be quite important on how the relationship [with that organization] develops”*. Either driven by a personal commitment to the project or specifically assigned to such role, these individuals may mediate during decision-making processes and help with the coordination of project-related activities, the provision of just-in-time support, and the delivery of consistent messages.

Finally, a third salient relationship refers to the importance of involving (groups of) teachers in the design of curriculum innovations, either proactively (e.g. by participating in the design of curriculum materials) or reactively (e.g. by providing feedback during pilot studies). For example, one project leader commented, *“Teachers in the schools who opted for the pilot participated in a substantial way to trying the ideas and materials out, and in*

*the first place in providing feedback on them*". Involving teachers from early stages contributes to the design of curriculum innovations from an implementation perspective.

### *Strategies for initiating and sustaining relationships*

Data analysis uncovered three key themes pertaining to how relationships are initiated and sustained. One of these themes has to do with a visible presence. Relationships with actors from the educational system are not restricted to a particular project, but rather are built through continuous and complex interactions across time. Therefore, being visibly present at events within the field (e.g. conferences, meetings, talks, evaluation committees, etc.) contributes to nurturing and strengthening these relationships, even when no clear need or plan for cooperation has yet been identified. This was explained by one project leader as follows, *"You are doing things with these bodies on agendas that don't exactly coincide with your own but through that process you build up relationships of trust and have opportunities to influence..."*. A visible presence helps to garner support for innovation ideas, "get people talking" about certain issues, participate in decision-making processes, and make contacts with (potential) funding agencies.

A second theme highly emphasized throughout the interviews relates to the perceived value and relevance of project goals. Relationships were typically triggered and facilitated when there was alignment between the project's goals and the goals of cooperating individuals and/or organizations. In words of one project leader, *"It should be a win-win situation, each partner should have its own objective which should fit the common ground"*. In some projects this alignment was facilitated by partnering with organizations that could relate to the project's goals and/or with organizations who had a particular interest in the project. In other projects additional initiatives had to be taken to ensure such alignment. This was the case, for example, of the Assessment is for Learning project, where alignment of researcher and project interests was encouraged by the provision of small grants so that researchers could study aspects of the program as it was being implemented, while also assisting schools and teachers.

A third theme emerging from the data analysis relates to the acknowledgement of the complex, conflictive, and interpersonal nature of the relationships with and between project partners. Building responsive relationships based on trust and sustained communication was regarded by most project leaders as central for facilitating collaboration. This can be illustrated by the words of one project leader who, while reflecting on the nature of relationships between various actors commented, *"There are a*

*lot of conflicts. People have strong opinions, have different insights...so is how you work with all those personal issues that leads to creating comfort for everyone, so everyone feels open and safe, and they can share, and that their interests will be honored and protected, but also that everyone is going to have to make compromises, and that we are working towards best ideas, not personal power for different people".* Leaders emphasized the importance of being aware of this complexity and investing in navigating the more personal negotiations of needs within projects.

### **Scholarly significance**

It is well known that understanding the perspectives, values and motives of different change agents is essential to understanding what facilitates and hinders curriculum implementation and change (cf. Fullan, 1991). The findings from this study suggest that the same holds true not only for implementing, but also designing innovations. Specifically, these findings suggest that attending to relationships (professional and personal; strategic and unplanned; formal and informal) should be a key consideration in shaping the process of designing large scale curriculum reform. The proposed paper expands upon salient relationships that warrant attention and identifies potential strategies for initiating and maintaining them; in addition, specific examples will be provided of how this has been accomplished.

*Note: The research described in this paper meets the criteria for human subjects research protection set by the University of Twente's ethics committee.*

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