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The system diagnoses itself

Using causal loop mapping to deal with fundamental problems at the Friesgasse School, Vienna

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*How can a group of administrators, teachers, and students use systems tools, like causal loops, to investigate the underlying systems that will affect their school's survival? Here is one approach, from a Catholic school center in Austria. The author is a faculty member at the Vienna University of Economics and Business Administration and one of the leading champions of "fifth-discipline" work in Austria. (He helped edit the German edition of *The Dance of Change*, for example.) The particulars of this story (Catholic school, local academic, etc.) may not apply to you, but we think the basic experience, and most (if not all) of the steps, are applicable anywhere. It also shows how causal-loop diagramming can form the foundation of a university-level course in any form of management.*

One day last year, I received a call from a person working at a School that was at that time unknown to me. The "Privatschule der Schulschwester von Unserer Lieben Frau", generally known as School Sisters of Notre Dame (SSND), is a private School run by a Catholic convent, serving about 1400 children, of all religions, in the Vienna area. Friesgasse combines several different institutions under one roof: a kindergarten (equivalent to American kindergarten), an early primary school (grades 1-4), a "gymnasium" (grades 5-12, for academic students), a "main school" and "commercial school" (middle and high school, respectively, both intended for less academic children), and an afternoon "after-school" where students of all ages work together while waiting for their parents to come from work. All of these types of schools are common in Austria, but it isn't typical to group them together in one institution.

The full name of the school is "Privatschule der Schulschwestern von Unserer Lieben Frau", abbreviated to "Privatschule Friesgasse" to reflect the name of the street on which the School is located. The managing director, or *Werksleiterin*, is also called the "principal of principals," because each of the individual school principals is accountable to her. We are grateful to the administrators and faculty of Friesgasse for their help checking over this article.

On the surface, Friesgasse seemed stronger than ever. The school's managing director had been instrumental in helping make the Convents values clear to the Schools which the Convent governed, to the neighboring community. The schools had a very good reputation; their students were encouraged to help each other, and they took part in the governance of the schools. The schools had a good track record in helping "disadvantaged" and non-academic students, many of whom came from working class immigrant families, to go on to better futures. They had even helped some of these students cross from the vocational track to the academic track, a rare occurrence in Austrian education; the managing director, who had the ability to grant tuition waivers, had taken a personal interest in many of these students.

But the leaders of the school, particularly the *Werksleiterin* herself, still felt uneasy, as if the school-center were vulnerable. Enrollments for "main schools" (less academic middle schools) were dropping throughout Austria, and Friesgasse's main school was no exception. To compensate, the commercial school had accepted more students than planned; the side effect was that this school was running out of space for its classrooms. There was also a general feeling that tensions among the six individual schools did not allow the parts of the organization to feel like they were part of one entity. Most of the 150+ teachers did not seem to know or care much beyond the boundaries of their particular school. The decline in birth rates suggested that the pressure on enrollments would keep getting worse. Finally, for several years the number of women joining the convent had decreased. How would Friesgasse maintain its Christian values if only a few people from the convent were available to work there?

When I first met with the *Werksleiterin* in January 1999, she did not talk about all of these issues explicitly, although in retrospect it appears as if she had all of them implicitly on her mind. In the first meeting she openly told me, that she could not tell me what she was looking for exactly, but she wanted something to

move the organization forward. When we started talking about causal loops she recognized their potential for bringing the six schools closer together and supporting them in getting stronger against any external influences. Her own charismatic leadership had been, for many years, the “glue” that held the school together. As a visionary leader, she realised that one day there might be no one from the convent to take her role and provide that glue. So it was a good time to start preparing the school-center for a time when it would face unprecedented pressures, and maybe she herself would be gone.

As it happened, one month later, I was scheduled to teach a university business school seminar on systems thinking and causal loop diagramming. I proposed that one of the school’s administrative staff members attend my class, to exchange in-depth experience with others. This is not typical at the university, but I feel it is important to invite one or two non-students to participate in my course, so they can share their problems on a daily basis and thus help the students see the real business world.

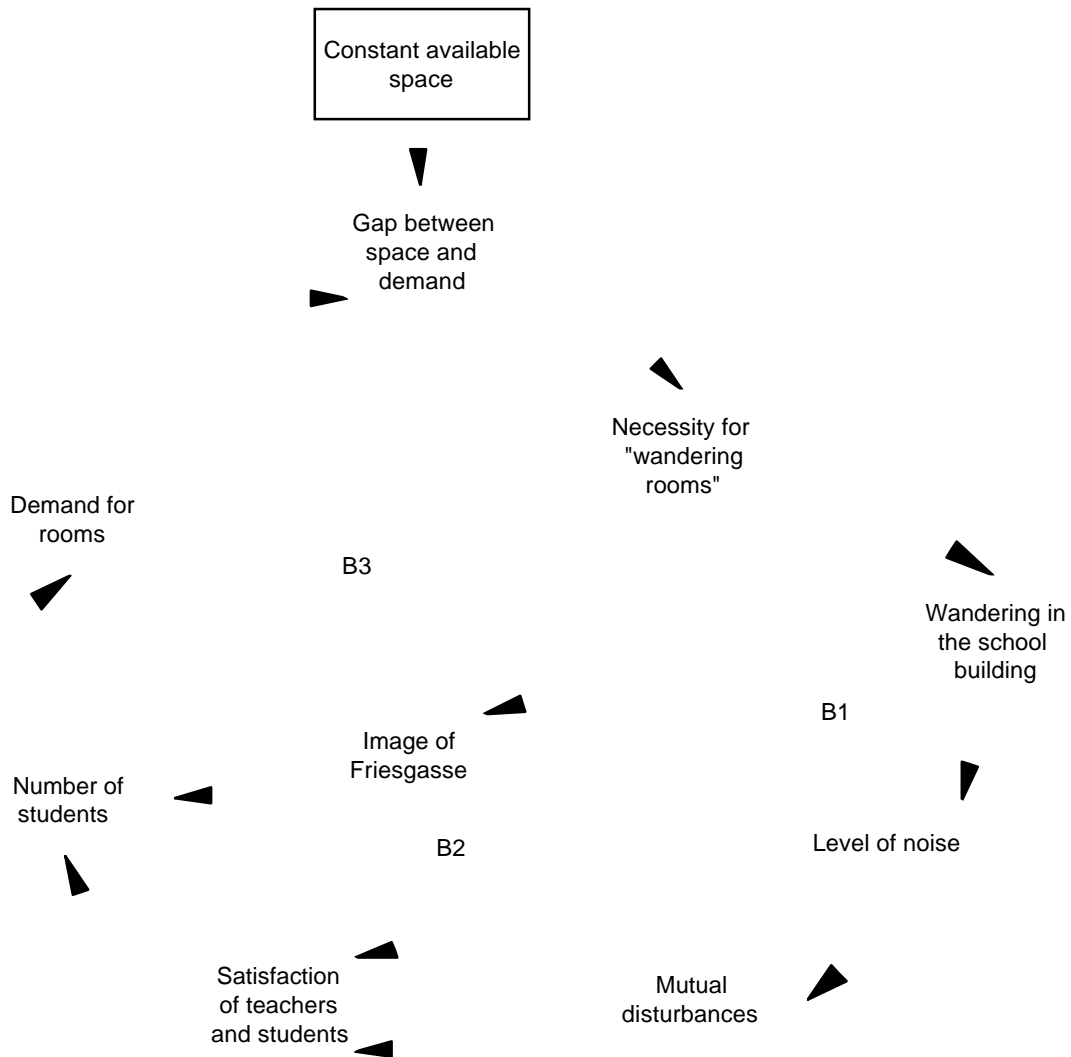
Several weeks and a few meetings later, I presented a proposal for a causal-loop project to the 6 Friesgasse principals. We wanted them to be involved as early as possible. When they offered their support, a steering group of four designers began to meet regularly: the staff member who joined my class, the Werksleiterin, a consultant who had worked on smaller projects in the Friesgasse the year before, and myself. We knew that we could not just diagnose the school’s “systemic problems” and present the solutions to the principals – or to anyone else in the school community. They would simply ignore our recommendations. Instead, we followed this sequence, designing each new step as we went along:

We conducted an introductory course on causal-loop diagrams for the principals. Since they set the tone for change in each school, nothing could happen without them. We especially wanted to give them a way to see how the school system as a whole worked together. We started with a generic problem: the story of a city that had tried to avoid pollution by instilling speed bumps. They mapped the causal factors and talked about the possible unintended consequences. We then moved to an educational story from their school: The school had tried requiring its staff and students to wear slippers, to reduce cleaning costs. Throughout these sessions, we used unfamiliar conversational techniques: slowing down the conversation, reminding them to listen instead of shouting about their own ideas, and (without calling much attention to it) using a “koosh-ball” as a talking totem. The principals found it novel to let their ideas

flow without fear of anyone interrupting them. One of the principals even asked, “Can’t we use this kind of approach for our meetings?”

We set up similar introductory courses for hand-picked teams of ten teachers and ten students, respectively. We had hoped to have all schools represented, but as the age varies from 5 to 18, this would not have worked. So we picked older students from 15 to 18. In the beginning we kept the groups separate; if they felt safe, it would be easier to get the dialogue going. Here again, people said, “This is a very interesting way to talk. This is a tool we could use for our school.”

Right after the summer break, we held two “mixed group” workshops, bringing together a balanced blend of principals, teachers, and students from the introductory courses. (A review of what they had learned before the summer break showed that the students remembered it better; they started telling the teachers how to draw them.) In these sessions, we created another causal loop of the school, using large index cards to describe individual elements of the system: The number of students, the money taken in for tuition, the opportunity to invest in new technology, the quality level of the schools, the schools' image, the level of parent interest, lack of space, level of personal attention, and so on. We rearranged the cards on tables until the loops seemed to make sense. Then I asked them to recount the story to me as if I were a complete newcomer. They walked me through loops like this:



As space remains constant but demand for rooms goes up, this produces more need for "wandering classes:" a group with no classroom of its own, which migrates from gym to music room to science room during the day. The more wandering classes, the higher the noise and distraction (B1), and the lower the satisfaction (B2), and the lower the school's image (B3). Eventually, this would erode the school's number of students.

It was fascinating to watch the teachers realize that the students knew more about the school than they did. Some students had been there since kindergarten

and thus had first-hand experience with three of the schools. The teachers had just seen their own classrooms. The students were a significant factor in pulling together the stories.

During the semester, the other external consultant and I began working our way among teachers and students in all six schools, trying to “hear stories” which would illustrate these first-draft causal loops in their primitive, first-draft form, and help us better understand the school. By now, teachers and students had heard of our project, and it would have been easy for them to assume it was a secret project and to fall into “defensive routines” – unconsciously resistant habits of thought aimed at protecting themselves. By introducing ourselves openly, we precluded that attitude. Instead, people were eager to share their stories. “He’s talking to everyone else,” they’d say. “When is he coming to talk to me?”

Throughout this stage, we tried hard to listen for evidence that the causal loop hypotheses were right or wrong, and to pick up other patterns. As we talked through other hypotheses, we found ourselves clearing up longstanding misunderstandings and bad communication. In all of these issues I tried not to look for solutions, but for the problem and recurring patterns that had to be surfaced. Providing easy solutions was not our job. We were there to help people see their own reality more clearly. Even when I saw a recommendation I could make, I forced myself to keep my mouth shut.

Throughout this phase, we kept returning to the four-person steering group to check our perceptions. This gave us the confidence to keep on track. To keep our larger team of students, teachers, and principals involved, we asked each of these 3 groups to take photographs of their five most favorite and least favorite locations in the school. Then we displayed the photographs in the entrance hall to the buildings. People were startled to see the buildings where they spent so much time, through each others’ eyes. Often, teachers who had been there 20 years didn’t know about some of these places: “Och, we have a photo laboratory? I never knew that...”

On the same bulletin board where the pictures were displayed, we invited people to submit proposals for changes in the school. We provided forms with a space where they could envision their own involvement. Instead of saying, “Dear *Werksleiterin*, do something about this,” they began to realize that it was up to them to create the school.

The impact of the project

As we listened, we learned that some of the most fundamental policy questions had more to do with the social structure of the schools than with their formal governance. For example, one of the major bones of contention was the four exercise rooms that the six schools shared. An old arrangement had established the times that each school was entitled to the rooms. As the sizes of the student bodies had developed at different speeds, the assignments were no longer right. Moreover, some core group members felt that their schools were chronically short-changed in the scheduling.

Instead of deciding on a change, the *Werksleiterin* provided a space where representatives from each of the six schools could meet and talk the problem over. As it turned out, the problem could be solved. The administrator of the largest school, who was a math teacher by training, showed through a set of calculations that there was sufficient space for all classes. This was a great relieve. As the teachers had seen each other suffer through the discussion, they were willing to go for the solution as a team.

A major next step will be to map the stories we have heard during the last months into a first draft of causal loop diagrams. Together with the core group of students, teachers and principals, we will check the loops. Then the core groups will take these loops back to the schools: Explaining it to their peers, surfacing their implicit knowledge, and taking stands in favor of the new practices that the loops suggest. They know they will have to ask themselves, each step of the way: “Is this really right? Can I argue for that? Can I explain it?” And they will have to bring their feedback back to another working group in Spring. From there, the school will be ready to decide where the leverage points might be, and then to take action.

Already, the intense communication among the teachers on the project started to pay off. The majority of the teachers have started to realise, that this was “not a usual thing” going on. The loops are an invitation to look at the real picture and reveal each person's partial blindness. When people attacked the project, we tried to get them involved instead of selling our solutions to them. In short, it was time for everyone to see that their school was a living system, where each person could contribute, and each single development mattered.

There is one occasion I recall as one of the highlights in the development: In October 1999, the *Werksleiterin* took a one-week trip to the United States; I went abroad immediately after that, in November. When I got back, one of the

administrative staffers called me aside and said, “We spent ten hours in dialogue while you were gone, and we realized we had fallen into the same old pattern. In the past, we waited for the convent to make decisions. Then, after the *Werksleiterin* came, we let her make the decisions. Now, we just realized, we’ve been shifting the burden to you; “This Berchtold, he’ll do the work for us.” That approach no longer fit, she went on to say; the students, teachers, and principals are the most fundamental components of the system, and if they can reflect together without fear, then the system diagnoses itself.