Murdoch Middle School, Part IV

Anyone who visited Murdoch Middle School this year would be able to see that enormous changes have taken place since the day it opened its doors in 1996. It is now housed in a building that easily holds over one hundred more students than the prior one. In place of donated computers cobbled together by parent volunteers, students learn to use technology in a shiny new lab. A large, well-lit room provides ample space for physical activity during Massachusetts’ long winters – a vast improvement, according to physical education (“challenge class,” at Murdoch) teacher Russ Reid. And each Wednesday afternoon, students don’t go to their regular classes. Instead, they head off to activity periods, run by a mix of parents and teachers.

According to one of Principal Walter Landberg’s weekly letters home, the school started these activity periods as a way to bring students, parents, and teachers together in a less formal – but still educational – setting. Katie Starbuck, a fifth- and sixth-grade teacher who coordinates the program, said that the adults teaching the courses chose the topics according to their own interests. Students, too, pick by personal interest.

And it appears that there is something for everyone. Students can busy themselves by learning to quilt or going for a run. Some spend Wednesday afternoons cooking latkes; others practice African drumming or Ultimate Frisbee. One group of kids reports on these activities while running the school’s newspaper. And another, under the direction of Waters Foundation Mentor Janan Hamm, learns to use the tools of systems thinking and system dynamics.

But wait. What’s systems thinking, a key facet of the school’s academic program, doing in the activities period? When did it take on the same status as Ultimate Frisbee? Walter Landberg, now in his second year running the school, says that it really hasn’t, calling it “equal to other parts [of the school’s curricula] as a priority.” He describes systems thinking as harder to implement than the “three r’s,” because people haven’t been trained, either formally or informally. Right now, he said, “it is an icing that doesn’t always get put on.”

Icing? As in an extra? Something unnecessary? Not quite. Landberg is quick to point out that he would certainly prefer systems thinking to be visible in the school in more substantive ways. “It should be integrated with the other subject matter,” he says. “Not as a
chunk dropped in or added.” Right now, though, he says, the capacity simply doesn’t exist at the school to do this.

When Landberg began as principal, in the 2001-2002 school year, he took over a school in the midst of significant changes. In addition to the departure of both the school’s original principal and one who had served in the role for the 2000-2001 year, all of the founding teachers had left the school by June 2001. Add to that the school’s growth before the larger building opened this year, and throw in the oft-cited teacher shortage, and you begin to get an idea of what Walter Landberg’s summer was like. It makes sense that he wouldn’t turn down a talented candidate simply because he or she didn’t happen to know much about systems thinking. He estimates that, right now, half of the teachers understand systems thinking and system dynamics.

The Board also experienced turnover. The two last members of the group that had written the charter and comprised the original Board vacated their seats this year. It so happened that they had a good deal of experience with systems thinking themselves. When I asked current Board members about the current state of systems thinking in Murdoch’s classrooms, only one person answered me, saying that as a new Board member, she wasn’t familiar with the curricula.

It appears, then, that even if Murdoch had some people – both in classrooms and on the Board – who were able to get systems thinking integrated into various parts of the curricula by the school’s fourth year, they weren’t able to get it to stick. In the Fall 2002 CLE Newsletter, Debra Lyneis and Davida Fox-Melanson chronicled a similar challenge in the Carlisle Public Schools. Carlisle’s program is more mature than Murdoch’s; it also involves more mentors and classrooms. However, mentors in Carlisle still wrestle with the challenge of making systems thinking and system dynamics curricula activities work without having a mentor present each time they are taught.

One might say that Murdoch is only a step behind this more advanced program, then: systems thinking is currently present in isolated spots throughout the school, but it isn’t spreading. And it relies on specific people to exist at all. Landberg says someone looking to find systems activities in the school would see them, for example, in the challenge class, where Reid plans many of his non-competitive games by using the *Systems Thinking Playbook* (Pegasus Communications Inc., 2001).

During the 2000-2001 school year, Reid worked with the school’s mentor each week to integrate systems principles into his classes. While there was no modeling that took place,
he received a significant amount of one-on-one training that is still providing benefits to the school in the form of his ability to continue the program. However, he pointed to the personnel changes over the past few years as a hurdle in the school’s development. “Intermediate people,” – in other words, those who had already learned the basics of integrating systems thinking and system dynamics into their classrooms – “get frustrated with being in the same place every year.” He does not, he said, work to train other teachers about what he does, explaining that the school’s current structure and size don’t facilitate such collaboration.

Greg Orpen, who serves as the school’s mentor along with Hamm, is aware that the mentoring team, as well as other experienced teachers like Reid, isn’t providing the support he wishes they were. “Before you’re effectively mentoring,” he says, “you need to feel comfortable [teaching systems] yourself.” He reports that he and Hamm have spent much of this year learning more about systems thinking and system dynamics and networking with other, more experienced schools.

One of his most successful moves was to recognize that the expertise need not be transmitted through only the mentors themselves. When Murdoch’s fifth- and sixth-grade teachers wanted to plan a unit that included some systems thinking components, he realized that the best way to help them would be to connect them with some teachers in Carlisle. How did he do it? Simple: he taught fifth- and sixth-grade for a day, freeing up the teachers to meet with Carlisle’s. The result has been increased use of behavior-over-time graphs in a “Patterns of Change” unit, and a unit which helps students draw “connection circles” to analyze literature.

Orpen has also experimented with working at the other end of the spectrum: actually teaching systems-based classes with other teachers. He recently planned a lesson with a teacher who was teaching about population dynamics in China with a pennies-in-a-cup version of the In-and-Out Game. As the teacher helped the students divine the systems principles at play, he drew the stock-and-flow maps on the board.

Normally, he says, systems curriculum appears in small spots: a question on a test that requires students to draw a small stock-and-flow map, a small loop diagram that illustrates a point from a history lesson. You might even miss it altogether if you weren’t looking carefully, he says.

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1 See The Challenges of Infusing System Dynamics into a K-8 Curriculum (available as SE2001-09InfusingSDIntoK-8 on the clechange.org web site) or the CLE Fall 2002 Newsletter.
“As a teacher, knowing that I have a goal to help students think systemically, whether now, this month, or next year, makes the class work differently. But walk in off the street, and it’s not in your face.” And he is clear about how he means to spread it to the rest of the staff: “We’re waiting for them to just be ‘whelmed’,,” he said, referring to the enormous amount of work that recently went in to overhauling the school’s two-year curricula. “It’ll spread when people see success.”

Right now, Orpen’s organic method for disseminating the ideas is the only one at play. Both he and Landberg agree that there is no mandate from the Board or principal to use systems in any class, though people were encouraged to attend a recent conference as an introductory step. Landberg plans to begin next year with specific student goals for systems education, and then use those goals to hold staff accountable for getting kids there.

He was, in fact, rewriting the school’s accountability plan – a required document for charters, in some form, in nearly every state – as we spoke. Massachusetts insists that all charter schools spell out exactly what students will do and how well they will do it. If systems thinking and system dynamics success appears in the plan, and the students don’t demonstrate it, Landberg will have to answer to his Board, and the Board will be answering to the Department of Education.

Murdoch’s story, then, seems to be illustrating the principle that learning – and, by extension, improving skills – depends on feedback. In the early years, student learning slowed as kids waited for teachers to learn how to assess system dynamics work. Then, after a few teachers learned to do this, others found themselves stuck as they awaited instruction and comment from their more experienced colleagues. Finally, when most teachers were finally using systems thinking and system dynamics in their instruction, the school saw problems in the quality of the student products, since the teachers weren’t rigorously examining their own work.

Now, in the school’s eighth year, even the principal admits that he can’t provide his mentors feedback on how they are doing. Sure, he says, he could tell you that he isn’t pleased with where the program is at present, and that he knows that his leverage lies in helping the school set clear goals. But right now no one at Murdoch believes that he or she has the expertise to instruct other adults about how to teach systems-based curricula.

They are, as they get themselves up to speed, doing a number of other impressive things. Orpen has redefined what exactly a mentor’s job is, to allow his teachers to receive some help from more experienced colleagues – though those colleagues teach in another
school. Landberg is insistent upon systems thinking and system dynamics appearing prominently in the school’s new accountability plan. Other teachers are incorporating what they can, when they can – be it after school or in isolated lessons or units.

So if we were to graph the school’s progress in this area, it wouldn’t be the elegant exponential growth curve we might all hope for. Though the staff we might refer to as Murdoch I (roughly, 1996-2000) had to compile a large binder of units and projects in order to renew the charter, and though they included various systems thinking activities, those binders and papers were not of much use to Murdoch II (roughly, 2001-present). Having access to complicated or new curricula sometimes means actually having access to its author. There would certainly be points over the eight years when the graph would show improvements taking place, but there would be plenty of others when it would drop downward or plateau.

But first, we would have to decide what exactly would go on the graph’s y-axis. Number of lessons used? Number of teachers who use systems thinking and system dynamics? Number of kids exposed to the concepts, or to the tools? Which tools? What about tracking the impact, since Landberg mentioned that the current Board “has put a lot of focus on raising academics – seeing higher test scores”? These are the questions that get answered in the school’s accountability plan and allow the real work to begin. If last summer Walter Landberg had his work cut out for him in terms of getting a new building filled with kids and teachers, as well as ensuring the smooth completion of the construction project, then this one may hold fewer resumes and less saw dust, but it looks to be no less busy.

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