Creating Instructional Program Coherence

By Diana Oxley

In ongoing efforts to improve U.S. high schools, some reforms have focused on increasing course rigor and ensuring standards of proficiency. Many schools have eliminated Ds as a passing grade and dropped less rigorous courses and vocational tracks. State education departments have increased the number of required credits in some or all core content areas, established content standards, and instituted standardized tests. Some schools enroll students in on-grade level and remedial courses simultaneously, and recruit more students to Advanced Placement courses to broaden access to rigorous coursework. But there is yet another dimension to increasing course rigor and deepening student learning: instructional program coherence. Such coherence relies on teachers collaborating across content areas and grade levels with the aim of adopting common instructional strategies and systematically building on learning in multiple contexts. This practice appears to be a necessary ingredient of increasing students' knowledge and skill (Flowers, Mertens, & Mulhall, 2000; Goddard, Goddard, & Tschannen-Moran, 2007; McLaughlin & Talbert, 2005).

This kind of teacher collaboration is a particular challenge to secondary schools where the curriculum is organized as discrete course offerings and teachers' expertise is usually confined to a single content area. However, the research suggests that schools that are able to demonstrate increased coherence of curriculum, instruction, and assessment also show marked improvements in student performance (e.g., Newmann, Smith, Allensworth, & Bryk, 2001a).

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Just the Facts

- The research suggests that schools that are able to demonstrate increased coherence of curriculum, instruction, and assessment also show marked improvements in student performance (e.g., Newmann, Smith, Allensworth, & Bryk, 2001a).
- The key to schools' success is the requirement that teachers within a grade level share curriculum, instructional strategies, and assessments of students, and that curriculum and assessments build seamlessly from one grade level to the next.

- Kedro (2004) found similar results in his own research of St. Louis Public Schools and that of the Council of Great City Schools, which showed student achievement was positively affected by a combination of shared vision of improvement; consistent and cohesive instruction; and sustained and focused professional development.

What Is Instructional Program Coherence?

According to Newmann et al. (2001a), strong instructional program coherence flows from the use of a "common instructional framework (that) guides curriculum, teaching, assessment, and learning climate. The framework combines specific expectations for student learning with specific strategies and materials to guide teaching and assessment" (p. 299). School staffs can adopt such frameworks from external developers or create their own. The key to their success is the requirement that teachers within a grade level share curriculum, instructional strategies, and assessments of students, and that curriculum and assessments build seamlessly on subject matter from one grade level to the next.

Newmann, Smith, Allensworth, & Bryk (2001b) also developed a set of indicators to gauge instructional program coherence (see figure 1). In addition to the central aspects of program coherence—shared purpose and goals across subjects and grade levels—many dimensions of school practice beyond curriculum, instruction, and assessment must also be aligned to build strong program coherence. Those dimensions include student support services, professional development, school improvement planning and progress monitoring, and participation in new programs and initiatives. It is also imperative that curriculum, assessment, professional development, and leadership be sustained over time to allow teachers to refine their methods.

Benefits of Instructional Program Coherence

Because there are significant challenges in creating program coherence in secondary schools, the rationale for building coherence among smorgasbord offerings must be a powerfully compelling one. Evidence for the benefits of instructional program coherence comes from multiple sources, including research on learning and cognition, human motivation, and school-level effectiveness.

Figure 1
Indicators of Instructional Program Coherence

1. Teachers within a grade purposely link their curriculum (including arts, health, library, and computers, etc.) to stated learning goals and use common instructional strategies and assessments.

2. Teachers coordinate curriculum and assessments to avoid repetition and to offer students new and more complex aspects of subject matter from grade to grade.

3. School-sponsored support programs, such as remedial instruction, assemblies, field trips, tutoring, and parent education, are linked to curriculum, instruction, and assessment.

4. Professional development for staff members supports the implementation of a common curriculum, instructional strategies, and assessments.

5. Professional development programs are sustained over time.

6. The school strategically accepts and refuses programs and initiatives in a manner that supports staff focus, program continuity, and ongoing improvement.

7. School improvement planning and assessment directly address the school's progress in providing a common, coordinated, and sustained school program.

8. Over time, curriculum remains reasonably stable and provides teachers with sustained opportunities to learn how to teach it well. It also gives teachers ongoing opportunities to teach students how to succeed.

9. Over time, teaching assignments and key program leaders or leadership positions remain stable.

Learning and Cognition

Researchers in the area of learning and cognition (Bransford, Brown, & Cocking, 1999; Greeno, Collins, & Resnick, 1996) have demonstrated that teaching is more likely to produce learning when it connects learning in different contexts over an extended period of time. When learning is linked in this way, students are able to extend and deepen existing knowledge and adjust and refine understandings. Students' ability to apply learning in different contexts allows them to test what they know and generalize their knowledge.

Students' learning of mathematics in particular appears to benefit greatly from more in-depth instruction and opportunities to apply what is learned in new contexts. As evidence, Packer (2003) points to the Third International Mathematics and Science Study (TIMSS), which revealed that Japanese students outperform most other students on math assessments while their textbooks are thinner and teachers cover fewer topics in greater depth than in the United States. Learning to solve mathematical problems through projects requiring applications in other content areas takes more time than learning algorithms and may involve eliminating some course content. However, it is more likely to yield understanding of mathematical problems and the ability to apply mathematical knowledge in authentic situations (Hallett, 2003).

Human Motivation

Research on human motivation (Ryan & Deci, 2000) also suggests that coherent programs of study promote learning. Students' improved ability to master new content in contrast to learning by rote or gaining superficial understanding satisfies a basic human need for competence. Experiences of substantive learning motivate students to continue making the effort to learn. Further, when students learn content or practice skills in multiple classes, it allows them to see varied applications of new content and skills and to develop a sense of their meaning and value. Students are motivated to learn because the new content has intrinsic importance to them, not just the extrinsic value of a course grade.

School-Level Effectiveness

Coherence benefits the whole school community and supports professional development that follows the same principles of learning and motivation. As Newmann et al. (2001a) point out, teachers themselves should be able to gain greater skill and understanding of their craft through participation in coherent programs. There is greater potential for teachers to hone skills and sustain support for instructional improvements if they are provided with stable leadership; consistent, long-term professional development; and a means to collaborate across disciplines to test and refine new instructional methods.

Research on schools and districts attests to the importance of developing instructional program coherence. A study of Chicago Public Schools by Newmann et al. (2001a) found a "strong, positive relationship between improving coherence and improved student achievement" (p. 305). Kedro (2004) found similar results in his own research of St. Louis Public Schools and that of the Council of Great City Schools, which showed student achievement was positively affected by a combination of shared vision of improvement; consistent and cohesive instruction; and sustained and focused professional development.

Implementing Program Coherence

Clearly the multifaceted nature of building instructional program coherence represents a mammoth undertaking. Bringing school and teacher practices into alignment takes time, and stabilizing leadership and initiatives demands agreements and commitments not easily won.

Principals play an important role in overcoming such challenges by putting in place a common instructional framework that guides curriculum, teaching, and assessment and then creating staff working conditions and allocating resources needed to support it (Newmann et al., 2001a). Resources are key. In schools where coherence is weak, principals spread their resources across multiple programs with no common focus. "Some schools respond to increasing demands by adding new positions and programs, but consequently strain their ability to

operate in coordinated and productive ways" (Honig & Hatch, 2004, p. 16).

Miles and Frank's (2008) case studies of a large number of schools across the country confirm the importance of program coherence and the critical role of resource allocation in creating it. The high-performing schools in their studies revealed a consistent pattern in how school leaders allocated resources to support school improvement. School leaders in these schools reallocated and aligned existing resources to focus on what Miles and Frank call the Big Three Guiding Resource Strategies:

- Strengthening and emphasizing core academics and literacy instruction including increasing instructional time in the core
- Improving teacher quality through professional development, common planning time, and hiring
- Personalizing learning environments.

Although the following specific practices varied across schools, they function within the framework of the big three strategies to create a coherent and concentrated improvement effort.

Common instructional framework. Successful principals also pay attention to developing staff working conditions to support implementation of a common instructional framework. As leaders of the implementation, principals hold themselves and teachers accountable for successful follow-through and evaluate teachers for their effectiveness in using the framework.

Focused professional development. To support teachers during implementation, principals make sure that all professional development opportunities are focused on the framework and sustained over time (Kedro, 2004; Newmann et al., 2001a).

Collaborative organization. The capacity of school staff members to create instructional program coherence depends heavily on collaborative organization. Ideally this is carried out in interdisciplinary teams that include core content, professional/technical, and special education teachers. To facilitate teachers working together to create program coherence, principals must provide common planning time

within and across grade levels. Principals with strong coherent instructional programs are able to promote extensive collaboration and create and maintain "collective decisionmaking structures" (Honig & Hatch, 2004, p. 22). Small learning communities, professional learning teams, career academies, and small schools offer powerful vehicles for collaboration across subject areas and grade levels (Oxley, 2006). In large comprehensive high schools, smaller units may well be the only way to achieve program coherence.

Interdisciplinary teams of teachers. A reasonable first step in creating program coherence is for interdisciplinary teams of teachers to develop overarching learning goals to which all teachers can peg their instruction. These broad goals for student proficiency (see figure 2) are shared by all teachers regardless of their area of certification. Some goals may fall more heavily on some teachers than others, but all teachers orient their instruction to some degree to identified areas of student proficiency. Ideally, these proficiencies should align with state content standards so that they are integral to the core curriculum and not just additional material.

Figure 2
Goals for Student Proficiency

Student proficiencies. Broad learning goals that guide student and teacher work and are consistent with state/district content standards.

Student demonstrations of proficiency. Public demonstrations of students' learning involving students' choice of varied formats.

Assessments of student proficiency. Rubrics built by teachers (sometimes in collaboration with community partners) that set standards consistent with post-secondary education and work requirements.

Students publicly demonstrate these proficiencies, and demonstrations become a focal part of progressing through high school—a formal rite of passage to the next higher challenge. Assessments of student proficiency are central to ensuring high standards. They must be developed with postsecondary education and work requirements in mind so that the demonstrations provide clear evidence that students are indeed on track to graduate and able to succeed in postsecondary education.

Examples of Program Coherence

It may be helpful to examine some of the work that high schools are currently carrying out to increase program coherence. At Atlanta's Southside High School, teachers have worked collaboratively to develop student proficiencies as part of the school's restructuring into smaller learning communities (SLCs). Leah Ervin, the leader of one SLC, can attest to the benefits of this practice. "When you know what you have to do, it makes it easier for the teacher to focus," she says. "When you know that this student has to be proficient in writing a persuasive essay and this student has to be proficient in applying math to an everyday situation at home like a budget, you see where the core content classes connect and [you realize] we can almost kill two birds with one stone. The teachers will work together to do that."

In all three of Southside's SLCs, teachers generated what they wanted students to know and be able to do in relation to their SLC theme and content standards. They grouped the items into clusters on the basis of what they shared in common. Then they tested each proficiency area against a set of criteria:

- Focus. Does it provide a focus to learning activities?
- Coherence. Does it help students see meaningful connections across the core and extended core?
- Relevance. Does it convey a clear, compelling purpose to students, teachers, and parents, linking ideas to actions and learning to life?
- Equity. Does it provide a rigorous learning experience for students at all levels of academic achievement?

- Priorities. Does it address the areas of highest need for our students as defined by data on student achievement?

Teachers then gathered in discipline-based teams to map content standards onto each proficiency area. This exercise pointed out the standards that were not addressed by the proficiencies and prompted discussion about whether any of them warranted adjustment.

Once the proficiency areas were established, teachers asked: how will we know if our students have mastered the knowledge and skills of each area? The two dozen faculty members in Ervin's Fine Arts and Media Communications SLC are currently revising the requirements for a senior project so that it not only provides tangible evidence of student mastery but also aligns with new Georgia performance standards for all core subjects.

Teachers are still fine-tuning their proficiency areas, year-to-year demonstrations of mastery, and interdisciplinary teaming. However, Ervin sees evidence that this approach to teaching and learning is making a difference for Southside's staff members and 920 students, who are overwhelmingly low-income and African American. "The students seem to like being here; they enjoy coming to school," she says. "They're okay with saying, 'Can I come to your office? Can you show me how to do this? I have to do it for so-and-so's class.' Also, we're more like a family now. I feel really safe here with the faculty and the staff. And, when I say safe I mean it's okay to offer constructive criticism to improve instructional practices, or to collaborate with someone and go in and say, 'Can you show me how to do this better?'"

The numbers back up Ervin's feelings. In the past four years, Southside's graduation rate has climbed from 50% to 86%. The school has made adequate yearly progress each year during that period, and scores on the Georgia High School Graduation Test that measures achievement in all core subjects and writing have "improved tremendously," according to Ervin. Southside has also seen an improvement in attendance rates, achieving its target of having fewer than 26% of students absent 10 days or less during the school year.

At Oregon's South Salem High School, school leaders and teachers are just beginning to devise ways to create program coherence for their 470-student freshman academy. At a professional development session, assistant principal Lillian White explained to the group that instructional program coherence represents "a move away from memorization toward more meaningful concepts and connections between what students are studying and the real world."

Like their counterparts at Southside, the South Salem teachers followed the same process of developing student proficiency areas linked to their academy's vision. Refining the proficiencies created by the academy's leadership team, the teachers identified several categories they considered key to freshmen success: readiness to meet workforce expectations; critical thinking and analysis; math, science, and technology skills; literacy; and organizational/study skills. The list was fleshed out as teams of teachers from the same disciplines defined what it means to demonstrate literacy, hone study skills, or think critically. Trainer Katie Luers, an SLC specialist from the Northwest Regional Educational Laboratory, pointed out that many of these proficiencies are already built in to what the teachers currently do. However, said Luers, "With specific expectations, you can make them explicit to your students." And by reinforcing those expectations in every classroom, students see how their educational experiences tie together.

Conclusions

The work of creating program coherence in traditional secondary schools is complex and difficult. Yet, the examples of South Salem, Southside, and other schools across the country show that teachers readily engage in developing specific expectations for student proficiency and attest to the power of pulling together across disciplines to teach key knowledge and skills.

What may prove more challenging is to accomplish other aspects of program coherence: aligning initiatives; stabilizing leadership; and creating vehicles to facilitate program coherence, such as small learning communities and smaller schools. Those reforms require collaboration, agreements, and common commitments across school and district levels and offices within districts. All of these components are clearly needed to support and sustain leaders' and teachers' work in making secondary education more rigorous and compelling.

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