Professional Learning Communities
(Mathematics)

Why Is This Strategy Useful?

The fundamental components of a professional learning community are collaboration among school stakeholders (teachers and administrators) with an explicit focus on student learning. The benefits to the staff and students include a reduced isolation of teachers, better informed and committed teachers, and (ideally) academic gains for students.

Description of Strategy

The term professional learning community describes a collegial group of administrators and school staff who are united in their commitment to and focus on student learning. They share a vision, work and learn collaboratively, visit and review other classrooms, and participate in decision making. DuFour (2004) asserts that professional learning communities must be anchored around 3 “big ideas,” namely:

1. Ensuring that students learn
2. A culture of collaboration
3. A focus on results

To best foster professional learning communities, research suggests that stakeholders should carefully consider supportive conditions – that is, where, when, and how do staff come together as a unit? Adequate time and space, willingness to accept feedback, respect and trust among colleagues, and supportive leadership are all important elements. Professional learning communities work with a common vision towards goals – some develop action plans, and assign roles such as facilitator and record-keeper to ensure the process moves forward.

As teachers are engaged in professional learning communities, it is helpful to be aware of subject-specific features of academic departments. For example, Grossman and Stodolsky (1995) argue that teachers work within “subject subcultures,” which they describe as “characterized by both beliefs about the subject matter that bind teachers together and by norms regarding teaching practice, curricular autonomy, and coordination” (p. 8).

For teachers of mathematics, Stodolsky and Grossman summarize their findings:

“The responses of math teachers conformed closely to the expected curricular consequences of a defined, sequential, and somewhat static subject in which teachers are generally prepared in a common field. Math teachers report less control of curricular content, more consensus, coordination, standardization, press for coverage, and course rotation than teachers of other subjects. Math teachers might be viewed as the prototype of those who work in well-defined and sequential school subjects in which students are required to enroll in a number of courses.” (p. 242)

Research on professional learning communities is not sufficiently advanced to determine if subject subcultures play a role in the implementation, sustainability, and effects of professional learning communities, but teachers may take these researchers’ observations into consideration and reflect upon the ways in which assumptions may interact with their learning communities.

Research Evidence

Although there is a great deal of theoretical literature about professional learning communities, the research base in support of professional learning communities is primarily comprised of

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Case study research indicates that the use of professional learning communities has several positive outcomes, including improved climate and instruction. In addition, professional learning communities may be a more sustainable approach to school reform. A more robust body of research (see: http://www.sedl.org/pubs/change34/5.html for a summary) describes school-level practices that are similar to those ideally demonstrated by professional learning communities and associates these practices (collaborative climate, a shared responsibility for student success) with higher student achievement.

Sample Studies Supporting this Strategy


Available at: http://eaq.sagepub.com/cgi/content/abstract/42/1/124

Background: Implicitly, innovative schools have historically contained some (but not usually all) of the properties of learning organizations and professional learning communities but have a weak record of sustaining success over time. Can innovative schools that self-consciously establish themselves as learning organizations and professional learning communities sustain their early promise of success in the face of the predictable cycle of the "attrition of change"; of pressure and envy in the surrounding district, profession, and community; and of the historically specific and recent pressure of standardized reform?

Purpose: This article explores the impact of these influences on three innovative schools and their sustainability over time. It concentrates in particular on the promise and viability of one of these schools, which has been consciously modeled as a learning organization and professional learning community.

Conclusions: Although further research is required, the article concludes that the learning organization and professional learning community model may provide a more robust resistance to conventional processes of the attrition of change and of surrounding change forces, but much like other innovative schools, it also shows signs of defaulting to conventional patterns of schooling in the face of standardized reform.


Effective school restructuring requires teacher motivation and action to transform knowledge about change into reality. This paper defines and describes what is meant by “professional learning community;’ describes what happens when a school staff studies, works, plans, and takes action collectively on behalf of increased learning for students; and discusses what is known about creating such communities of professionals in schools. The literature indicates that professional learning communities produce positive outcomes for both staff and students. For staff, being part of a professional learning community reduces teacher isolation, increases commitment to the mission and goals of the school, creates shared responsibility for the total development of students, creates powerful learning that defines good teaching and classroom practice, and enhances understanding of course content and teacher roles. Other benefits include higher satisfaction and morale and reduced absenteeism. A review of a synthesis of five case studies (Louise and Kruse, 1995) identifies factors of good leadership and elements of effective external support.

In this article we argue that understanding subject-matter differences among high school teachers is crucial for the analysis and reform of secondary schools. An emerging line of research suggests that high school teachers belong to distinctive subject subcultures; these subcultures are characterized by differing beliefs, norms, and practices. We report findings from surveys and interviews with high school teachers that illustrate salient aspects of subject subcultures. Shared beliefs about the possibilities and constraints posed by different school subjects may complicate efforts to restructure high schools or redesign curriculum.

Additional Resources:


Process for Developing Learning Communities. Southwest Educational Development Laboratory (SEDL). Available at: http://www.sedl.org/pubs/change34/6.html


What I learned from working in a professional learning community. Available at: http://www.maa.org/features/051105whatilearned.html