Collaborative Teams to Support Data-Based Decision Making and Instructional Improvement

Jeffrey C. Wayman
Center for Social Organization of Schools
Johns Hopkins University

Steve Midgley
The Stupski Foundation

Sam Stringfield
University of Louisville

Address correspondence and requests for reprints to Jeff Wayman, Center for Social Organization of Schools, Johns Hopkins University, 3003 N. Charles Street, Suite 200, Baltimore, MD 21218. Email jwayman@csos.jhu.edu.

Introduction

Principals and other school leaders have been given a difficult charge: take an abundance of student data, mostly in the form of assessments, and turn this data into information to be used in improving educational practice. To read policy and news accounts, one might surmise that the mere act of providing student data is sufficient to create a school culture driven by this data. On the contrary, although many educators embrace the notion of becoming more reflective practitioners, few educators have the preparatory background to engage in such analysis and reflection.

While the research literature provides case studies on individual schools or educators that have successfully used data to improve achievement, Stringfield, Reynolds, & Schaffer (2001) found the use of data at the school level to be an incredibly difficult task. School personnel wishing to use data to inform instruction often lack proper systemic supports. Instead they often rely on the "Hero Model," so dependent on the heroic work of one or more individuals that the initiative is unsustainable after the hero leaves. Our observation is that data initiatives are replicable and scalable when they are built with proper supports at all levels to help educators in this endeavor. One such support is the establishment of collaborative data teams.

The goal of collaborative data teams is to form groups of educators that can work and learn together as they engage in the process of using student information to examine and improve their craft. These teams are typically established at the building level and can exist in a variety of forms: they can be made up entirely of teachers, or may also contain administrators, counselors, or other building personnel. These teams may be formed within or across subjects and grade levels. Regardless of their makeup, these teams all serve the same purpose: to support educators in conducting inquiry into practice, and make this inquiry efficient and fruitful.

Educator collaboration is supported by many researchers as an efficient way to improve education (Schmoker, 2004) and are a particularly promising support for a topic such as school data use, which will be new to most educators. The difficulties of educator collaboration have also been described (e.g., Gunn & King, 2003), so it is necessary to establish a firm research base on the implementation of collaborative educator data teams.

In this paper, we report preliminary findings on a project from the Stupski Foundation to encourage data use within a larger reform context. Our preliminary findings highlight the difficulty of efficiently implementing collaborative data teams, but also provide initial evidence toward the efficacy of such teams.

The Stupski Foundation and the District Alliance Project

The Stupski Foundation was founded in 1996 as a non-profit operating foundation to help ensure all children in America, regardless of race or income, have access to a high-quality public education. The Foundation believes that its most effective contribution to education reform will be through support at the district level, providing expert resources and financial investment in district partnerships. Resource teams working with School Districts include former superintendents, educational leaders, and consultants who have led successful district reform initiatives, as well as organizational development, data analysis and systems experts. The Foundation's District Alliance school reform partnerships began in 2001 with six small to medium sized urban, suburban and rural Districts on the West Coast (9,000-50,000 students). In subsequent years, larger and more geographically diverse Districts were also added. All districts have been included on the basis of their demonstrated need regarding low student achievement in an environment including high poverty, high minority population and often with English language acquisition problems.

District Alliance partnerships are expected to last from 2 to 5 years of active work, after which time the Districts are expected to serve as a model of reform for other districts beginning

the program. Partnerships are primarily with urban school districts and are focused on a systemic approach to school reform, with a goal of developing high performing schools that provide high quality educations for all students while closing the achievement gap between ethnical, racial and socio-economic populations.

The Stupski Foundation helps districts attain increased student achievement by supporting the use of research-based best practices in a strategic way, mindful of the unique needs of the district and its community. One of the key factors in this reform is a commitment to making equitable decisions and to consistently allocating its resources in ways that ensure all students achieve at high levels. The Foundation envisions equity not in the sense of treating all students equally; but in taking the necessary steps to guarantee that all students are successful.

Such a charge requires that school cultures be addressed. In the District Alliance project, cultural transformation is addressed through high expectations for focus on student achievement by all stakeholders of the District. This commitment is demonstrated by what people say and do, and their shared sense of responsibility for results. Transforming a district culture in this way requires relentless focus and strong, consistent leadership.

The Stupski Foundation has identified seven inter-related components it believes are essential to attaining cultural transformation and to accomplishing the goals of improved student achievement, equity and social justice. All seven components must be present to bring about meaningful, long-term, systemic school reform. The seven core components of the Stupski Foundation's work are:

- Strong, visionary results-oriented leadership.
- Alignment of action, resources and results.
- Standards-based curriculum and powerful teaching.
- Effective and efficient processes.
- Active engagement of internal and external stakeholders.
- Employee and student accountability for results.
- Stellar teachers, board members, leaders and support staff who are continuously learning and growing.

The Present Study

In the present study, we sought to identify facilitators and challenges to the implementation and function of collaborative faculty teams that use student data to improve instruction and achievement.

The present study focuses on four specific districts that have partnered with the Foundation for over two years. These districts range in size from approximately 10,000 to 35,000 students, and cover a range of ethnic makeup and economic classes.

The present study reports on preliminary evidence from these four districts regarding the process of establishing collaborative data teams to aid in the betterment of educational practice and student achievement. Data for the present study consist of observational and reflective evidence collected by Stupski Foundation personnel.

Collaborative Data Teams

The benefits of educator collaboration are particularly valuable in involving faculties in data-driven inquiry into their teaching and practices. The use of data to improve educational practice is new to most educators, so the support and drive that results from group effort will serve data novices well. Wayman (in press) noted that the relationship between data use and collaboration is reciprocal: data initiatives are more likely to be successful if teachers are allowed to learn and work collaboratively, and the use of data helps foster constructive collaboration. Additionally, using data within a collaborative framework affords educators more opportunities

to interact and share ideas across disciplines, and offers teachers opportunities to interact with and assume a variety of roles in the educational hierarchy.

The reform efforts of the Stupski Foundation provide insight into challenges and facilitators in the promotion of collaborative teams as a support for data use. In the following sections, we describe four contexts that emerged from the data regarding the establishment of collaborative data teams: the exploration of standards and definitions for learning ("calibration"), a focus on student data, engagement of educators, and technology to support data use.

Calibration

Collaborative inquiry as described here demands a strong consensus regarding standards, definitions, and goals about schooling; without such consensus, this work can become fragmented and diffuse (Copland, 2003). This process is reciprocal, because an inquiry-based approach builds a common vocabulary and focus (Copland, 2003).

The establishment of common ground is not only important for leadership within collaborative teams, but at all levels of the system. From the top of the district down through the classroom, it is important to engage in the up-front work of defining what learning is, how instruction should be conducted for such learning, and how the assessment of such learning will take place. We refer to this process as "calibration," to remind ourselves that this work involves the dual duties of standardization and ongoing modification.

The calibration process allows stakeholders to explore personal positions on important questions such as, "what should students learn" and "how will we know learning has happened," with the stated aim of arriving at a group (e.g., team, school, or district) set of common standards and definitions. Much as a mechanic would calibrate the settings of an engine for maximum performance, so should school personnel calibrate the foundations and goals of schooling in order to produce positive learning experiences.

At the building level, calibration activities (e.g., multiple grading of the same student work products by a number of teachers using a common rubric) can provide a concrete process for schools or individual teams to identify areas of success, deficiency, and inconsistency. Three of the study districts have experimented with this strategy and have shown positive anecdotal results with a few teacher teams. However, these districts have not yet been able to incorporate this activity systemically into a larger system of accountability and instruction. The calibration process at the building level will be more fruitful if the school and district has participated in a similar, aligned process, setting goals at the district level and aligning these goals into objectives at the classroom level.

Two study districts have recently begun to move toward this more systemic approach to calibration, creating district-wide accountability systems that direct schools to set local goals based on the success of their students. While this in itself is a common practice (Reeves, 2004), these districts have additionally made substantial investments to ensure that the school goals are connected to regular collaborative meetings of teachers, and vice-versa. These meetings focus on student work, standards-based instruction and regular assessment.

Early evidence indicates that the calibration process is serving these districts well. In the three study districts that exhibit calibration behaviors, we are observing initial progress in understanding reform issues, along with some changes in teacher and principal practice. As the calibration process continues to unfold in these districts, we anticipate this up-front work will serve these districts well in sensitive interpersonal issues at the school level, where calibration can serve to defuse potential conflicts due to the traditionally autonomous nature of teaching. In a case study of teaming in one school, Gunn and King (2003) showed an absence of shared educational orientation exacerbated conflict. This underlines the importance of engaging in

discussion about and defining a shared vision/concept of teaching and learning – otherwise, everyone goes their own way.

This is particularly important because of the frequent disconnect between policy-definitions of success and individual educator definitions. Although accountability policies mandate that schools, teachers, and students be judged by external assessment data, Ingram, Louis, & Schroeder (2004) showed that teachers judge schools, themselves, and students by broader, less definite criteria (e.g., behavior, grades). The calibration process is thus an important link between policy, which often ignores this aspect of school culture, and classroom reality, where educators operate autonomously. While educators may eschew assessment results as too narrow to be of much good, it is possible through the calibration process to engage educators in the process of identifying what information they find useful in mandated assessment, and define what information should be collected to augment assessments.

Focus on Student Data

Over the years, all of the study districts have attempted a variety of collaborative techniques in an effort to build more effective practice throughout their systems. These prior efforts encountered the same frustration: they wanted to "go deeper," but had neither the tools nor the guidance to do so. It was not until these districts fully engaged in the thorough examination of student data, studying how well their students were meeting specific, time-bound learning objectives, that these districts began to feel their collaborations were yielding the deep information they had hoped.

The message that student data facilitates collaborative work is perhaps best described in a counterexample from one of the study districts. In this district, faculties are meeting regularly about improving educational practice, but are not examining student work and assessments in a consistent and focused manner. Instructional progress in this district is impeded because the conversations in these meetings center on student learning only in the context of sharing techniques and materials, not on specific student learning progress. Collaborative conversations that center on topics such as "what did my students learn recently and how do I know this," and "in what practices have I engaged that affect student learning" make conversations around "I have these materials that might help you," or "have you considered this activity" much more meaningful.

There is a broad spectrum of student data that faculties will find useful, so leaders need not feel that they need to find the perfect type of data. Wayman, Stringfield, & Yakimowski (2004) provide a more thorough overview of data types, but common examples include: (a) student data profiles, which provide information contained in a student's permanent record such as demographic information, test histories, and relevant family information, (b) summative assessments, such as state-mandated tests, are used to document student achievement at the end of a quarter, semester or school year, and (c) formative assessments that are given more frequently and are intended to guide planning, instruction, and daily practice. No single form of student data provides all learning information, so teams will find it useful to triangulate student information, using multiple forms of data to assess student learning.

Summative data have served many uses in the study districts. Summative data have been used to define an agenda for upper-level district administration and help build political support for a long-term strategic information plan. Summative data have been used to help teachers and principals identify specific groups of students for remediation, and to provide a positive base for identifying areas of strength and improvement in educator practice. Summative data have also been used for capacity-building. One district in particular has found success in shifting their analysis paradigm from a prevention focus to a one of capacity-building. The success related to such a paradigm shift is common in other studies of capacity-building (e.g., Brown, D'Emidio-

Caston, Benard, 2001) and particularly underscores the importance of a positive focus in using student data for school improvement.

Student data profiles do not typically provide the detailed learning information that formative assessments do, but are popular with teachers because of the breadth of information provided (Wayman & Stringfield, 2005). These profiles lend themselves well to teaming because they provide an overall picture of the student's situation to educators from varied areas. When such profiles have been made available electronically, student data profiles have been used consistently in our study districts. Unfortunately, electronic versions of student profiles are sometimes difficult to produce, particularly with a home-grown student data system. Many commercial data systems offer student data profiles, and this feature is one that vendors are placing emphasis and development (Wayman, 2005).

Engagement

It is our position that data initiatives built entirely around mandates are hard to sustain and are unlikely to yield widespread change in instructional practice. Consequently, it is important to engage educators at all levels in the construction of how inquiry will be conducted.

In promoting effective teaming around data use, it is important to note that many teachers are understandably mistrustful of data initiatives. Interviews with teachers about accountability and data use show that teachers often feel negative pressure from external incentives (Mason, 2003). Ingram et al. (2004) found that much of this mistrust can be solved by involving teachers in the construction and implementation of a data initiative. Schmoker (2004) noted that effective teachers must see themselves active members of research teams, rather than as implementers of someone else's script.

In building data teams, it is important that compliance is not the focus of collaborative inquiry. Too much structure and mandate of how data inquiry and teaming are to be conducted hinders deep, reflective thought, since team members are more engaged in responding to a data mandate than in reflection and inquiry around this data. In two of the study districts, a rigorous curriculum was implemented that initially helped improve achievement. However, inquiry within this curriculum eventually deteriorated into a compliance system, and any achievement setbacks were blamed on the system rather than solved through practical inquiry. Leadership can solve these problems by providing structure, but allowing inquiry and reflection to develop relevant to the particular context, similar to that described by Copland (2003).

Striking a balance between the healthy, supportive pressure infused by mandates and the rich, contextual growth fomented by free inquiry is difficult. Administrators in one of the study districts have taken on this problem after recognizing the inhibitions caused by a too-rigorous curriculum. The superintendent in this district has become very proactive in releasing some freedom back to the school level and creating two-directional communication and cooperation across levels of the school hierarchy. In such an environment, collaborative data teams can be a powerful player because they can serve to focus the opinions of educators from a wide range of backgrounds and provide a forum for educator engagement.

Engaging teachers and principals in the planning and design process is important to developing any instructional system. Collaborative data teams can be an important forum for such engagement to occur. Though not always strictly involving collaborative data teams, we have observed many forms of engagement in systems planning in the study districts, involving formation of accountability systems, selection of computer data systems, and the selection of program materials and assessment instruments. Districts who involved principals and teachers in these processes were generally able to make more rapid and effective use of data for school improvement.

<u>Technology</u>

Limited access to data is often a barrier to widespread school data use (Thorn, 2002; Wayman, Stringfield, & Yakimowski, 2004). Historically, there has been no shortage of school data, but these data have typically been stored in ways that are inaccessible to most educators (Wayman et al., 2004). The rapid deployment of user-friendly technology for varied kinds of data access has ameliorated this situation, offering unprecedented data access to educational professionals.

Unfortunately, technology is often seen as a panacea for school data use. Supportive technology is a necessary condition for a scalable data initiative, but it is not sufficient (Stringfield, Wayman, & Yakimowski, 2005). To be effective, these systems must be implemented with proper leadership and support; teacher use of these systems is more rapid and fruitful when teaming is involved (Wayman, in press).

In the study districts, we saw contrasting examples of implementation of student data systems, with contrasting results. One district provided regular training sessions for principals, offering opportunities to work with data from their schools in these sessions. The district provided an established senior leader to act as a coach and advisor to help principals build skills and leadership capacity around data use with the system. This district also promoted the system at every opportunity, touting the power and potential held by this technology.

In contrast, another district in our study had implemented a system with similar capacities and data elements, but was not as proactive in supporting the technology. Use of the system was not championed, nor were plentiful opportunities provided. Consequently, the capacity of the first district to engage in data use is considerably higher than that of the second district, and we anticipate a corresponding difference in the capacities of data teams in these districts.

Computer data systems are viable supports for collaborative data teams and vice versa. Technology holds the potential to increase the capacity and efficiency of educator use of student data, and collaboration is a positive method to help educators learn about uses of particular software, and increase interest. Zhao and Frank (2003) suggested that positive teacher interaction is crucial to the survival of any new technology, because of the positive pressure groups place on individuals. The authors also found their teacher interaction construct to be a prominent factor in teacher use of technology. Wayman (in press) pointed out that student data form a non-threatening base from which to begin conversations in teams; student data systems help provide this data in the rapid fashion needed to build upon early team successes.

Conclusion

Evidence from this study suggests that collaborative data teams are a positive force in supporting data use for improved educational practice. While promising, collaborative teaming can be difficult to implement, and we have observed barriers raised when schools were not operating with certain systemic precursors to facilitate teaming. There is much yet to be learned about best practices in the implementation and conduct of these teams. As the teams in our study schools become more established, we hope to join with other researchers to place important pieces into this research puzzle.

References

Brown, J. H., D'Emidio-Caston, M., Benard, B. (2001). Resilience Education. Thousand Oaks, CA: Corwin Press.

Copland, M. A. (2003). Leadership of inquiry: Building and sustaining capacity for school improvement. Educational Evaluation and Policy Analysis, 25, 375-395.

Earl, L., & Katz, S. (2002). Leading schools in a data-rich world. In K. Leithwood & P. Hallinger (Eds.), Second international handbook of educational leadership and administration (pp. 1003 – 1022). Dordrecht: Kluwer Academic Publishers.

Gunn, J. H., & King, B. (2003). Trouble in paradise: Power, conflict, and community in an interdisciplinary teaching team. Urban Education, 38, 173-195.

Herman, J. L., & Gribbons, B. (2001, February). Lessons learned in using data to support school inquiry and continuous improvement: Final report to the Stuart Foundation(CSE Technical Report No. 535). Los Angeles, CA: Center for the Study of Evaluation (CSE), University of California, Los Angeles.

Ingram, D., Louis, K. S, & Schroeder, R. G. (2004). Accountability policies and teacher decision making: Barriers to the use of data to improve practice. Teachers College Record, 106, 1258-1287.

Mason, S. A. (2003, April). Learning from data: The role of professional learning communities. Paper presented at the 2003 Annual Meeting of the American Educational Research Association, Chicago IL.

Reeves, D. B. (2004). *Accountability in action: A blueprint for learning organizations.* Englewood CO: Advanced Learning Press.

Schmoker, M. (2004). Tipping point: From feckless reform to substantive instructional improvement. Phi Delta Kappan 85, 424-432.

Stringfield, S., Reynolds, D., & Schaffer, E. (2001, January). Fifth-year results from the High Reliability Schools project. Symposium presented at the meeting of the International Congress for School Effectiveness and Improvement, Toronto, Canada.

Stringfield, S., Wayman, J. C., & Yakimowski, M. (2005). Scaling up data use in classrooms, schools and districts. In Dede, C., Honan, J. P. & Peters, L. C. (Eds.), *Scaling up success: Lessons learned from technology-based educational innovation.* San Francisco: Jossey-Bass.

Thorn, C.A. (2001). Knowledge Management for Educational Information Systems: What Is the State of the Field? *Education Policy Analysis Archives, 9*(47). Retrieved on April 8, 2005 from http://epaa.asu.edu/epaa/v9n47/.

Wayman, J. C. (in press). Involving teachers in data-based decision-making: Using computer data systems to support teacher inquiry and reflection. *Journal of Education for Students Placed At Risk, 10*(3).

Wayman, J. C. (2005) *Technology that facilitates school improvement through data-informed practice.* Presentation at the 10th Annual K-12 School Networking Conference of the Consortium for School Networking (CoSN), Washington DC.

Wayman, J. C., & Stringfield, S. (2005, April). *Teachers using data to improve instruction: Exemplary practices in using data warehouse and reporting systems.* Paper presented at the 2005 Annual Meeting of the American Educational Research Association, Montreal Canada.

Wayman, J. C., Stringfield, S., & Yakimowski, M. (2004). *Software enabling school improvement through analysis of student data* (CRESPAR Technical Report No. 67). Baltimore: Johns Hopkins University. Retrieved on April 8, 2005, from http://www.csos.jhu.edu/crespar/techReports/Report67.pdf.

Zhao, Y., & Frank, K. A. (2003). Factors affecting technology users in schools: An ecological perspective. American Educational Research Journal, 40, 807-840.