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ABSTRACT

This study examined the longitudinal effect of a comprehensive school design and reform program on faculty perceptions of their contribution to students, collegial support, and autonomy in a secondary school. The study sought to establish whether these changes in faculty members' perceptions of their work environment covaried with the implementation of the School Design Model (SDM) program. The RSM Interview Form was administered to faculty on three occasions. The first administration occurred during a pilot phase of the SDM when the school's traditional independent school program and a pilot of the SDM program were both in operation. The second administration occurred 2 years later during the full implementation of the program, and the third during the continuation phase after an additional 2 years. Results indicated higher overall scores for faculty perceptions of culture in the SDM program over teachers in the traditional program. These improvements remained stable in both the implementation and continuation phases of the program. Comparison with a benchmark study of over 40 schools revealed that despite the comprehensive reform of the work environment, faculty remained positively disposed toward their contribution to students, felt more reinforced by peers, and experienced no major changes in their perceptions autonomy. (Contains 67 references and 1 table.) (Author/RT)

RUNNING HEAD: SCHOOL REFORM AND FACULTY CULTURE: A LONGITUDINAL CASE STUDY

School Reform and Faculty Culture: A Longitudinal Case Study

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Abstract

The purpose of this study was to examine the longitudinal effect of a comprehensive school design and reform program on faculty perceptions of their contribution to students, collegial support and autonomy in a secondary school. The study sought to establish whether these changes in faculty members' perceptions of their work environment covaried with the Implementation of the School Design Model™ - SDM™ (Bain, 1994). The SDM is a comprehensive school reform program implemented over the last eight years at Brewster Academy, a co-educational independent secondary school. The RSM Interview Form (Independent School Management, 1994) was administered to faculty on three occasions that corresponded to the phases of innovation described by Fullan (1991). The first administration occurred during a Pilot phase of the SDM when the school's traditional independent school program and a pilot of the SDM program were both in operation. The second administration occurred two years later during the full Implementation of the program and the third during the Continuation phase after an additional two years. The results indicated higher overall scores for faculty perceptions of culture in the SDM program over the teachers in the traditional program. These improvements remained stable in both Implementation and Continuation phases of the program. The results of the Brewster study were then compared to a benchmark study of over forty schools conducted by Independent School Management (1994) using the same dependent measure. The comparison revealed that despite the comprehensive reform of the work environment faculty remained positively disposed toward their contribution to students, felt more reinforced by peers, and did not experience major changes in their perceptions of autonomy.

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School Reform and Faculty Culture: A Longitudinal Case Study

Introduction

The many challenges and frequent failure of school reform initiatives have caused researchers to pay increased attention to the cultural and human side of change (Evans, 1996; Hargreaves, 1997a; Rossman, Firestone & Corbett, 1985; Poole, 1991). Researchers and those practitioners directly involved in reform efforts have recognized that the perceptions and values of individual teachers and their preparedness to accept new initiatives are critical to the success of any school reform effort (Bodilly, 1996; Elmore, 1996; Gonder, 1999; Honig, 1994; Pogrow, 1996; Viadero, 1995). These work-related perceptions, norms and values shared by some or all of the teachers within a given school are commonly referred to as "faculty culture" (Parelins, 1980, p. 4).

According to Owens (1991) the culture of organizations develops over time on the basis of institutionalized norms and assumptions acquiring deep and significant meaning. In school settings these cultures are elusive and manifold (Feiman-Nemser & Floden, 1985) frequently embedded in the informal life of the school. School reform initiatives by definition intrude upon the existing norms and assumptions of schools disrupting the culture with programs that reflect new assumptions and beliefs, norms and values about teaching and learning.

Cultures of teaching influence how teachers approach their work, how they deal with change and their sense of efficacy about making a difference in the lives and futures of their students (Hargreaves, 1997a). This study will describe a school reform initiative and the results of a longitudinal study of faculty perceptions of culture with a specific focus on perceived contributions to students, reinforcement

from peers and perceptions of autonomy during and subsequent to the implementation.

Brewster Academy

Brewster Academy is a co-educational independent (private) secondary school, (grades nine through thirteen) of three hundred and fifty students. Two thirds of the students board at the school and enroll from twenty-eight states and sixteen countries. Over the last nine years, Brewster has engaged in a comprehensive school reform effort that has resulted in the re-engineering of all aspects of the school's programs (Bain, 1996; Bain, Fallon & Smith, 1999; Brosnan, 1996; Brown, 2000; Dimmock, 2000; McCord, 1999). The tenets, programs, and practices developed and implemented in Brewster's re-engineering program are based upon a comprehensive approach known as the School Design Model™ - SDM™ (Bain, 1994). Brewster employed the SDM as a strategic methodology to build a new program. The SDM is targeted at accelerating the growth of students academically and socially and reflects the sustained systemic effort recommended for major reform efforts (Cicchinelli, 1999).

Brewster's mission is focused on preparing students for success in higher education. The school accepts students across the ability spectrum, twenty-five percent of whom meet accepted classification criteria for learning disability (Mercer, 1999). The overall performance profile for students entering the school approximates that of the average U.S. secondary school on standardized tests of achievement (Bain, 1999).

Prior to the implementation of the SDM program in 1993, Brewster's educational approach was consistent with that of many independent schools accredited by the New England Association of Schools and Colleges. The school

offered a traditional college preparatory curriculum in a residential environment that included small classes and the opportunity for additional academic and learning support. The academic program, curriculum, professional development and personnel models reflected the highly autonomous and loosely coupled approach (Weick, 1976) that is the traditional hallmark of independent schooling (Bain & Ross, 2000). Teachers are generally attracted to independent schools because of their emphasis on high levels of curricular autonomy, teacher independence (NAIS, 2001) and a general predisposition toward content expertise over educational methodology. While emphasizing a commitment to individual difference in learning style, Brewster operated in a manner fully consistent with the independent school ethos. This included limited program and personnel evaluation activity, a loosely articulated professional development program, and highly autonomous curriculum (Bain, 1992).

In the late 1980's and early 1990's, Brewster Academy suffered a decline in program quality and attractiveness from an enrollment standpoint. This was reflected in elevated levels of student attrition and conduct problems, a growing mismatch between the curriculum offered and the enrolled student body, and academic performance below the national average. These conditions were caused by rapid growth in the 1980's that proved difficult to sustain in a highly competitive environment, and a loss of programmatic differentiation with competing schools. Other independent schools developed programs for academic support, an area that had formerly distinguished Brewster in the field resulting in a diminution of the Brewster's competitive advantage. An interaction of these factors made it increasingly difficult for the school to meet the enrollment targets required for successful operation. By 1992 the school possessed the drivers to do something different.

The School Design Model

According to Little (1997), reforms communicate not only technical changes but a vision of teaching and learning and are more or less compatible with the cultures in which persons work. The SDM represents a profound change in the work culture at Brewster (Brosnan, 1996) and of independent schools in general. In this section, we will visit the content and process of the SDM in order to fully describe the nine-year process of change at Brewster Academy.

The reform at Brewster is a response to the need for holistic design solutions to address the complex challenge of school reform. Dimmock (2000) characterizes a design approach as a deliberate, intentional and comprehensively planned approach to school development. We assume that creating contexts for the support of true learning professionals and their students requires the coherent reconsideration of the nature of the learning environment including the processes to nurture growth and to provide feedback. The SDM is focused on creating environments that prepare and sustain the growth of such professionals.

The Content of the SDM

The SDM is comprised of eight research-based school design elements woven together into a coherent design model. The model has been described in considerable detail in Bain (1994; 2000) and Dimmock (2000) and will be overviewed here, with a description of the content and then the implementation process.

Policy.

At the core of the design is the development of a learning policy for the school, the SDM's first solution. The policy documents the school's values and beliefs as they relate to how the school can best serve its students. The learning policy represents a point of convergence between what is known about the professional practice of education, much of which is sourced outside of the school in the early phases of the SDM, and the specific needs of the school and its students

as represented by stakeholders. The latter represents the context, the needs and drivers in the school setting. As such, policy creation is neither completely bottom-up nor top-down but an interaction of factors and forces from within and outside of the school.

Body of Practice.

The policy sets the term of reference for the most culturally ambitious element of the design, the development of a body of practice. The SDM calls on the school to identify a set of practices and approaches that it believes, based upon its policy, will best serve its students.

These are practices and approaches that all teachers will master over time. Our goal is not to define "the" absolute body of practice. Rather, we believe that by identifying and then subsequently clarifying well-founded approaches, a school can build connections to teachers' roles, create the capacity for differentiated curriculum, and legitimize mechanisms for support and feedback.

The criteria for selecting practices are:

1. The practice or approach has been subjected to quality research over time and quality meta-analysis wherever possible.
2. The approach has been translated into successful programs for use by teachers in schools.
3. The approach meets a common sense standard - it makes sense to experienced capable practitioners.

The body of practice at Brewster Academy, including reference sources for programs and research, can be seen at (The Endeavour Group®, 2001a).

Curriculum.

We know the curriculum is the core of every school's program and that a list of best practices is not a curriculum. In the SDM, curriculum is seen to be an

interaction of well supported pedagogy and content frameworks, classroom management that allows for the teaching of multiple groups in the same classroom, the adaptation of instruction to deal with individual difference, and the integration of instructional technology (e.g., Wang, 1992). The SDM curriculum is based upon a deeper study of fewer subjects (Sizer, 1984) in a four year mastery-curriculum that focuses on demonstrable authentic assessment outcomes.

Students study math, history, English and science as well as electives in the arts, foreign language, journalism and technology. Those students with learning differences also receive instructional support. Students move through the curriculum at one of three levels in a heterogeneous classrooms based upon their past performance. Vertical movement through levels is actively encouraged.

The SDM curriculum design is embedded in a suite of curriculum software tools known as the Curriculum Authoring Tools™ (CAT's™) (Bain, 1997; Bain & Huss, 2000). This software represents an elaborated schema for those transactions associated with the design model and implementation of curriculum. Specifically the CAT's are designed to integrate contemporary research on curriculum design including frameworks; authentic and portfolio assessment (e.g., Wiggins, 1993, 1998); effective teaching (e.g., Greenwood & Delquari, 1995; Rosenshine, 1986; Slavin, 1990); heterogeneous grouping (Wheelock, 1992); and adapting instruction to deal with individual difference (Huck, Myers & Wilson, 1989).

The CAT's are employed to translate the integration of best practice approaches into a manageable design and delivery system for classroom with a focus on developing instruction at multiple levels in the same classroom. The goal of the software and the curriculum solution is to flatten the learning curve of faculty in the acquisition of knowledge in all areas associated with curriculum building and implementation. The tools are used to establish a common lexicon of best practice and a common development methodology.

Training Institute.

The fourth solution of the SDM is a pre-service training program to provide faculty with the skills necessary to work in the SDM school. Brewster's training program, known as Brewster Summer Institute, has been conducted for eight years. The program is of six weeks duration and is the entry point to the SDM process. The content of the SDM training institute, in large part, covers some of the most well supported practice and basic needs of all teachers entering classroom practice (e.g., basic teaching skills, classroom management, testing and assessment, basic technology skills). The training institute is the beginning of a process of formal mentoring by department heads, through team based collaborative decision-making and feedback from students, peers, and supervisors with an opportunity for self-evaluation.

Human Resource Model.

The policy, body of practice, curriculum and training program represent the foundation of the SDM's fifth solution, the human resource model. Each of the preceding elements: policy, body of practice, and the curriculum design are used to clarify the roles, responsibilities and growth opportunities for faculty and administrators in the school, ensuring that they directly reflect the school's approach to meeting the needs of all students.

The elements of the human resource model include a set of position descriptions for the roles of teachers and administrators in the school. A sample position description for a teacher can be seen at (Brewster Academy, 2001).

The position description serves as the basis for a career path beginning with Graduate teacher and leading to the role of Senior Master teacher in graduated steps. Transition through each step in the process is based on the submission of a teaching portfolio employed by teachers to demonstrate mastery of each of the areas in the position description. Since 1997, forty-one Brewster faculty have made a successful

transition in the career path since the full school implementation of the design. Examples of early career and advanced teaching portfolios can be seen at (The Endeavour Group, 2001b).

Collaborative Teaming.

The portfolio process represents the culmination of a team based mentoring program, made possible by the sixth solution in the SDM, the collaborative decision-making model. The SDM calls for a systemic re-design of all aspects of the school's decision-making processes based upon a devolved collaborative decision-making model (Bain, 1994). The design is predicated on the belief that in the absence of a normative culture of practice (Elmore, 1996) reform will involve an initial heavy reliance on expertise from beyond the school. Collaborative process can be employed to process that knowledge, build ownership and capacity and devolve responsibility to individual faculty members and teams. This process is made possible by a consensus based management structure that is implemented across the school and includes management, teaching and student decision-making teams. The school is divided into teams that function as small schools using this model, with a team of teachers responsible for the educational experience of a discrete group of students. All teams are required to reach decisions by consensus, to produce and evaluate action plans and contribute to the attainment of annual school goals (Idol, Paolucci-Whitcomb & Nevin, 1986). Collaboration when combined with a team approach heightens the engagement of every teacher in the governance of the school (Johnson, 1990) by devolving decision-making responsibility to teaching teams who possess a common lexicon and process for addressing the needs of students.

Evaluation.

The goal of the SDM's seventh solution is to create powerful natural mechanisms for gathering and sharing information. Feedback and evidence on the growth of the school, a student or a teacher, is available all of the time, always

serving a formative purpose and readily available for the purposes of summative documentation, program advancement and research (Hattie, 1999). This is accomplished by integrating evaluation of students, faculty, team and school into a holistic model, enabled by a powerful suite of evaluation software tools (Bain, 1997) which are part of the Professional Growth Tools (manuscript in progress) (Bain, 2000).

The evaluation tools were developed based upon the policy, the body of practice in teaching, curriculum design, collaboration and teamwork, professional growth and the use of technology. The tools have been in use for three years at Brewster to build collaborative performance reports, gather and analyze surveys and conduct classroom observations over a school network (Bain, 2000). Formal evaluation reports are developed in partnership with faculty twice per year while the process of observing, meeting and mentoring occurs in a natural ongoing cycle. Teachers can go on-line to observe peers, complete surveys and receive and give feedback to peers and administrators as well as receive feedback from students (Bain, 2000).

For example, over 11,000 teacher evaluations by students have been gathered and analyzed over a three-year period. The integrity of implementation of the core teaching practices has been established in 1,976 classroom observations conducted over a four-year period that indicate levels of implementation of teaching practice between 86 and 92%. Each tool in the suite is based upon the body of practice, curriculum and professional expectations as defined in policy and articulated in the position description. Multiple evaluation approaches are used to tap the domains of interest while the perspectives of all stakeholders are included. Each stakeholder group (teachers, administrator, students) is evaluated while also serving as evaluators. The evaluation model in the SDM uses information technology to more

directly connect the relationship between teaching and learning in ways that avoid a focus on any single evaluation methodology or stakeholder perspective.

Technology.

The eighth and final content solution of the SDM is technology. Technology use in the SDM focuses on the creation of a school operating system (Bain, 1997) that integrates the key transactions associated with the admission of students, the design and implementation of curriculum, the management and implementation of program, the management of human resources and evaluation. The result is a suite of over eighty integrated relational databases that manage the key transactions in the school's learning process including the curriculum and evaluation tools mentioned previously. Each of the relational databases in the system is designed to bring the SDM to the classroom in ways that are accessible for teachers and students. The school's design is a prerequisite for the technology system design as opposed to the more common approach of grafting technology onto a generally loosely articulated existing program (Bain, 1999; Bain & Huss, 2000; Bain & Smith, 2000).

The overall technology design at Brewster includes a 1:1 teacher and student computer ratio and a high bandwidth computer network. For the purpose of benchmarking or comparison, the current Brewster program exceeds the requirements identified by the CEO Forum STaR Assessment for a Target Technology School (TTP, 2000). This designation includes those schools where the learning process has been redefined to take advantage of technology including access levels in excess of 3:1, a redefined physical layout of classrooms with online access to digital resources from within and outside of the school. However, the technology design in the SDM is based on the software system and is not dependent upon such a ubiquitous technological infrastructure.

Most important is that teachers have access for the purpose of design, development and management of instruction while students have instructional access

(e.g., one to four computers per classroom). From the perspective of the SDM, articulating the curricular and organizational characteristics of the school is a prerequisite to the meaningful use of technology. In doing so, it can genuinely add value to the educational experience of students.

The SDM Process

The SDM is comprised of four developmental phases entitled: Preparation, Design, Implementation, and Evaluation, generally consistent with Fullan's (1991) change model and its phases of Initiation, Implementation and Continuation. Fullan takes pains to point out that despite the three temporally aligned phases, change in education is highly idiosyncratic, a function of the many ambiguities about what the change means, its level of articulation, and its scope. We see the ambiguity about process being in part a function of the absence of a clear picture of what needs to be done and the clarification of the content of a design during the Implementation phase. This view is supported by the evaluations of the New American Schools (NAS). In that project the designs with the most ambiguous process experienced the greatest difficulty in implementation (Bodilly, 2001). Our experience implementing the SDM at Brewster lead us to a number of the same conclusions arrived at by Fullan (1991) and Bodilly (2001). We agree that the initial scale should be small; that broad-based needs assessment and pre-planning is sometimes less than fruitful. We recognize that there is a need for evolutionary planning in response to the implementation of the design; however we feel that design type planning in the Implementation phase is problematic.

Preparation Phase.

The SDM process begins with a very clear picture of what is to be done and a predetermined comprehensive framework. This means that the initiation process is less focused on evolutionary planning (Fullan, 1991) and instead focuses on choice

making and capacity building. With a clearer picture of what the change is about, the Preparation Phase of the design focuses on having the school make an informed decision about why it should undertake the SDM. The Preparation Phase then moves quickly to the process of building the capacity necessary for successful implementation.

The Preparation Phase at Brewster began in the summer of 1992 with a full faculty workshop that asked faculty what the school does well and what it needs to do better. The product of that workshop included a need for greater faculty training, improving the match between students and curriculum and collaborative decision-making. While Fullan advocates the value of a limited base of involvement at the initiation phase of an innovation, the SDM process includes opportunity for broad-based input while also limiting direct engagement with the design to a pilot process. The full faculty workshop was used to establish the needs and drivers for the innovation in a manner not inconsistent with establishing readiness and relevance in the Fullan model. At Brewster, the decision to proceed was made by the School's Board of Trustees who also received a presentation on the design and its implications (Bain, 1992). Based on a recommendation from the school leadership, in 1992, including the first author who functioned as the primary change agent for the design process, the school decided to proceed.

Design Phase.

The outcomes of the Needs Assessment Workshop provided the term of reference for the Design Phase that matched those needs with the design process. By this, we mean the design of policy, selection of pedagogy, and the design of evaluation tools to reflect the elements of need and strength identified by the committee. The basic elements of the SDM design are set, however the choice of a given teaching approach or evaluation method is flexible to reflect an interaction between the nature and needs of the setting and the criteria described previously.

The design process was undertaken by the first author in collaboration with the school's leadership and faculty throughout the 1992/1993 school year. During that time policy was crafted and adopted, the body of practice and curriculum design model was framed as was the human resource model. Additional presentations were made to build vision and inform the broader faculty about the elements, throughout the Design Phase connecting the design elements to the needs that the community had identified in its initial workshop. The design process culminated in the selection of a Pilot Program team who were the first group of teachers to implement the design. Teachers were selected from a pool of volunteers and were interviewed for a position on the team. Those who were unsuccessful retained their positions in the traditional program.

Implementation Phase.

The Implementation phase of the SDM at Brewster occurred over a four-year period from 1993-1997. The program was implemented in a step-wise fashion, one grade level at a time. It began with Brewster's first training program, Brewster Summer Institute which was conducted for six weeks in June and July of 1993 and trained the first team of ninth grade teachers who would participate in the program.

Stepwise implementation across the school is a critical element of the SDM process. The comprehensive scope of the SDM requires a careful approach to implementation in order to ensure integrity and provide support related to the body of practice, technology and curriculum approaches. The collective effects of the eight design solutions are sweeping. Teachers have new position descriptions, new evaluation requirements, new skills, new technology and new curriculum. This requires careful nurturing and support in the early stages of implementation. The stepwise approach also creates conditions for community members to observe the program in action and to identify whether the approach is something that they feel is aligned with their personal visions for the school and their careers.

Much of the school's software design and development occurred in this phase, as did the creation of infrastructure to support the program. As paper versions of curriculum processes, management and evaluation tools were tested, the foundation was created for the development of the relational databases that would ultimately power the school's operating system. In Brewster's case, the design was implemented in new physical space created specifically for its application of the SDM. The stepwise Implementation allowed some of the costs associated with the new physical design to be phased in over a period of years reducing the budgetary impact in any single cycle.

The interaction between setting events, people and the change process calls for frequent revisiting and assessment of the content and process during the Implementation phase. In the SDM, this required frequent assessment of the impact and timing of solutions with a focus on clarity and complexity described by Fullan (1991). How are the Design and the people interacting? How are individuals dealing with the elements? What are the points of tension? The team-based collaborative decision-making solution provides an excellent vehicle for generating this feedback. For example, in year's one and two (1993/1994 and 1994/1995) there was a lag between the full implementation of the evaluation model and the training process which reduced the levels of support and the implementation integrity of the design.

We also found from the team that the curriculum development process took more time than initially planned. The stepwise implementation afforded an opportunity to learn about and rectify these needs on a smaller scale. The end of the second year of implementation (1995) was a watershed in the personnel domain. Teachers who felt that the design was not conducive to their future needs and interests self-selected out of the school as the program moved from pilot toward full-implementation. In a relatively small number of cases the school did not rehire five teachers, while total attrition approximated 25%. At that time, it became clear to

the school community that based on the results of the first two years of the program and the reactions of teachers, it would evolve to a full school program. The Implementation Phase concluded with the graduating class of 1997, the first group of students for whom the SDM program constituted their total curricular experience at the school.

Evaluation Phase.

The period from 1997 to the present has been a period of evaluation and refinement that, while temporally aligned with Fullan's continuation phase, has a somewhat different focus. In Fullan's continuation phase, the focus is on decisions to continue with an intervention. Fullan describes the barriers to continuation including turnover, termination of funding and teacher support. Most important in Fullan's analysis is "institutionalizing the long term capacity for continuous improvement" (p.90). In the SDM, the Evaluation Phase focuses on refinement and institutionalization through program evaluation and curriculum development. The decision to continue the program was made during the second year of implementation (1994/1995). As such, continuation from the SDM perspective focuses on long term sustainability. This includes providing both the formative and summative evidence of performance required to endorse the program, ongoing curriculum development; and the refinement of technology to support, sharpen and enhance the connections between the eight solutions of the design.

We also sought to ensure that the human resource model and training processes were working effectively in order to address cyclical turnover in the organization. Fullan (1991) indicates that very few programs plan for the cyclical turnover of staff with orientation and training.

At Brewster, the Evaluation phase has been characterized by a shift in responsibility for the program evolution from change agent to school teams. For example, guidelines for curriculum development, originally produced by the first

author, have evolved into a second version through the work of a teaching and learning team, while the training institute is taught by teachers at advanced levels in the SDM career path.

The Evaluation phase has also been characterized by the refinement of the training institute and the creation of partnerships with a university to enable faculty to participate in graduate study. The partnership program integrates the professional work requirements (e.g., teaching portfolios, pre-service training) into Masters and Doctoral degree programs. Software has also been streamlined to make for more efficient program implementation, while teacher computers are frequently updated for greater efficiency at no cost for the duration of the faculty member's tenure at the school.

The Evaluation phase includes heightened activity in the area of research and dissemination with a goal of moving the program from Brewster as alpha site to a generalizable design methodology for other schools. We see the need to demonstrate sustainability through the completion of a program of research that demonstrates the outcomes of the SDM (including the present study) as a prerequisite to the broader dissemination of the design.

The School Design Model and Faculty Culture

The SDM is an example of what Drucker (1985) denotes as knowledge-based innovation combining both social and technical knowledge in the field of education. Drucker describes knowledge-based innovation as a phenomenon that frequently occurs as a convergence of a number of innovative forces that in some cases result in a completely new system or way of doing something. In the case of the SDM, the innovation includes the integration of research-based advances in teaching, learning, leadership and technology into a complete systemic methodology for school design and development.

While the design focuses on increasing teacher autonomy in instructional decision-making, it also requires teachers to develop a highly articulated set of new professional skills in teaching practice, curriculum development, collaboration and technology. This professional competency resides at the core of the design and is the subject of intense training, professional support and ongoing evaluation linked to career advancement and reward. These changes and reform of the school's organizational structure alter the way faculty interact with each other, with students, school leaders and parents.

According to Feiman-Nemser & Floden, (1985) interactions with students, teachers and parents, the nature of reward and career advancement, and perceptions of professional and technical knowledge are integral to the way teachers perceive their work culture. For example, traditional teacher work cultures tend to be isolating and "hands off" (Feiman-Neiser & Floden, 1985) while the SDM requires active professional collaboration. In the SDM, parents are actively encouraged to participate in the learning process while under normal circumstances there are limited interactions between parents and teachers (Feinman-Neiser & Floden, 1985). The role and relationship between faculty and administrators is frequently ambiguous (Feinman-Neiser & Floden, 1985), while in the SDM those roles and relationships are defined. Vertical career advancement based upon a highly articulated definition of professional knowledge is central to the SDM, an approach that is both controversial and uncommon in public and private settings.

Perceptions of faculty culture are also related to organizational effectiveness including levels of support, communication and collaboration (Owens, 1991). Faculty culture can be positively affected by dynamic and expert leadership; collaboration and participation in building vision and professional development; ongoing faculty development and frequent feedback based on the collection and review of school related data (Chance, Cummins & Wood, 1996; Dimmock, 2000;

Feldman & Paulsen, 1999; Fullan, 1997). These culture-building elements have corollaries in the SDM. They include the team based decisionmaking model, defined instructional leadership roles and the training—mentoring—evaluation cycle, which is designed to support faculty in their pursuit of student learning.

While the SDM approach provides significant professional opportunity for teachers and administrators, it clearly connotes a high level of challenge, especially given that it is the inverse of the prevailing culture in most traditional independent and many public school environments. Those environments are characterized by lower levels of collaboration, higher levels of autonomy, and more loosely articulated processes for curriculum design, delivery and professional support. The evaluation of the New American Schools (NAS) program (Berends, Kirby, Naftel & McKelvey, 2001; Bodilly 2001) provides a recent illustrative example of the levels of resistance experienced when design approaches that depart from the prevailing norms and assumptions of schools come into contact with existing systems and cultures. These include difficulties in timely implementation, attenuation of design elements, significant within school variance in implementation, and the dilution of designs and effects (Berends, Kirby, Naftel & McKelvey, 2001; Bodilly, 2001). While these points of resistance are often represented as bureaucratic or structural realities in the NAS evaluations, they are as likely to reflect the prevailing cultural norms and assumptions that exist in schools and systems about curriculum, reward, and the manner of interaction among the school's constituents.

The systemic and comprehensive nature of the SDM reforms, their simultaneous and deliberate implementation (Dimmock, 2000) and the extensive use of technology as an operating system for the design (Bain & Huss, 2000; Bain & Smith, 2000) result in the creation of a transformed professional work environment for SDM teachers. Those teachers are also functioning within a broader educational

milieu that, whether public or private, is yet to fully accept the roles, goals and efficacy of many of the approaches included in the SDM.

This problem is exacerbated by the tradition of extreme difficulty and "quiet" failure now associated with school reform efforts, as well as pro-innovation bias, weak methodology and tendency to blame the teacher if the innovation is less successful than expected (Bain, 2000; Honig, 1994; Pogrow, 1996; Poole, 1991).

Given the challenges associated with educational change and the often volatile circumstances under which it occurs, the opportunity to study the Pilot (Initiation), Implementation and Continuation phases of a major school reform afforded a unique insight into faculty culture during a change process. The rationale for this study was twofold. First, to gain insight into the perceptions of teachers at Brewster during the various phases of the SDM program and second, to benchmark those findings against a larger sample of schools surveyed using the same measure.

Specifically, the study sought to establish what effect the introduction of such a comprehensive reform would have on teachers' perceptions of their efforts with students. We also sought to establish the effects of the study on perceptions of teachers' relations with peers, especially given the strong focus in the SDM on collaboration and teamwork. We were particularly interested in the perceptions of teachers in the SDM regarding their sense of autonomy given the high value placed in this area by teachers and especially those in independent schools.

Method

Subjects

A total of one hundred forty one responses were gathered in three survey administrations. The sample in the first administration (1996) comprised forty-one members of the Brewster Academy faculty including teachers of math (6), science (7), art (4), English (5), history (5), foreign language (2) and learning support (9). Three teachers failed to indicate an affiliation. Of the sample, twenty-four were

participants in the SDM Pilot program while seventeen participated in the traditional independent school program (Pre-SDM). The average length of tenure at Brewster for the SDM Implementation group was 3.9 years and for the Pre-SDM group 3.3 years.

Fifty-two faculty members completed the second administration of the survey in June 1998. Of the fifty-two, nineteen completed the survey in its initial administration. The subject affiliations were as follows: math (6) science (6), art (2), English (3), history (5), foreign language (4) and learning support (12). Fourteen teachers did not indicate their affiliation. The average length of tenure for the SDM Implementation group was 3.3 years.

In June 2000, forty-eight respondents participated in the third administration of the RSM survey. Of the forty-eight, twelve completed the survey in its initial administration. The subject affiliations were as follows: math (8), science (7), art (3), English (4), history (4), foreign language (5) and learning support (13). Four teachers did not indicate their affiliation. The average length of tenure for the SDM Continuation group was 3.3 years.

Dependent Measures

The Research for School Management Faculty Interview Form (Independent School Management, 1994) was employed as a dependent measure in the study. The form is a ten-item questionnaire that probes faculty perceptions of the relationship between their efforts and student outcomes; their efforts and feedback from peers, colleagues and administrators; instructional autonomy, collaboration and the overall supportiveness of the faculty culture.

Prior to its use in the present study, the form was employed as a dependent measure in a five-year international study of faculty performance and culture in forty-two PreK-12 private/independent and, in two cases, public school settings in the United States and Canada. The study was conducted by Independent School

Management (Ideas and Perspectives, 1994). The breakdown of participant schools in that study was as follows: 30% K-12; 30% High School; 40% Pre-K-6/7/8/9; 85% US; 15% Canadian; 20% Boarding/Day; 80% Day; 20% Single Sex; 80% Co-educational; 70% Religious Affiliation; 30% Secular.

Survey Implementation

Each faculty member completed the questionnaire independently as part of scheduled faculty workshop days in 1996, 1998 and 2000. Faculty members were asked to report their years of experience and subject area. Names were not requested. The survey took fifteen – twenty minutes to complete.

Post hoc Interviews

A series of five open-ended (Weirsma, 1995) follow-up interviews were conducted with six teachers whose tenure at Brewster Academy covered all phases of the study. Participants were selected from a range of subject areas and roles in the SDM in order to capture a broad base of perspective. They included two department heads (history and science), a team leader, a music teacher, a foreign language teacher and the schools' longest standing faculty member, also a classroom teacher. In this study the interviews were employed as a second, post hoc source of insight to examine findings derived from the questionnaire (Bogdan & Biklen, 1998).

The interviews focused on *Questions 1-7* of the RSM survey and were employed to corroborate and broaden the interpretation of the data beyond the perspectives of the investigators. In preparation for the interview, the first author explained the study and the three surveys to the interviewees in a standard format after casual introductory conversation (Bogdan & Biklen, 1998; Weirsma, 1995). Interviewees were told that we were interested in their perceptions about the findings in order to broaden our interpretation of the data. The survey scores for each of the groups were shared with the interviewees and explained so that they had the information necessary to answer the interview questions.

We asked the interviewees to respond to the following questions:

• For survey *Questions 1 and 2*, we asked: There was a perceived strong relationship between teacher effort and student outcomes in all conditions. Explain why. Would you expect the SDM scores to be higher?

• For survey *Questions 3 and 4* we asked: SDM scores were higher on questions for collegiality and reinforcement from peers and colleagues. Explain why.

• For survey *Questions 5 and 6* we asked: Explain the responses to administrative support in the SDM.

• For survey *Question 7* we asked: Explain the difference between the groups for the item on teacher autonomy.

Results

Table 1 describes the median ratings by item for teachers in the traditional non-SDM program, the SDM Implementation and Continuation programs, and the RSM Study. It should be noted raw data was not available from the RSM study precluding parametric/non-parametric analysis of the data. The RSM study reported the median score as a measure of central tendency and the scores in the present study are reported similarly for the purposes of comparison.

Insert Table 1 about here

Questions 1 and *2* asked teachers how they felt about the relationship between their efforts and student outcomes. *Question 1* asks for an estimate of the days when faculty believed there to be not much relationship between the two, while question two asked faculty to estimate the percentage of days when there was a strong relationship between their effort and student outcomes. Teachers in each of the Brewster programs reported a median score of 8 in all phases while the RSM Study median was 9. Brewster teachers in each of the conditions felt that there was not much relationship between their efforts with students and the outcome of those efforts for between 20-29% of the days. The RSM score of 9 indicated that teachers in RSM program felt not much relationship for between 10-19% of days.

Question 2 asked for an estimate of the percentage of days when faculty went home feeling a strong relationship between their efforts with students and the outcomes of that effort. The median score for teachers in the Pre-SDM program was 7 indicating that they felt a strong relationship between their efforts and their outcomes on 60-69% of the days, while teachers in the SDM pilot group reported a score of 8 which fell within the 70-79% range. The SDM Implementation group reported a median score of 7 (60-69% of days) while the SDM Continuation group reported a median score of 8 (70-79% of days). The RSM group also reported a median score of 8 (70-79% of days). The RSM data for items 1 and 2 indicate that teachers in the RSM sample, like Brewster teachers in all phases, felt a relatively strong relationship between their efforts and student outcomes.

The developers of the RSM note that answers to *Questions 1* and *2* and to other paired statements will not necessarily sum to 100%; in fact the sum of the two answers will usually be less than that (ISM, 1994).

When asked to interpret *Questions 1* and *2* the post hoc interviewees revealed a consistent theme. They reported that "the belief that teachers make a difference" is a critical driver for any committed educator, one that is based largely

on subjective perception and not usually related to a particular approach, model or pedagogy. As such, the relatively uniform high scores and slightly higher RSM score reflect a core belief held by teachers that there is a relationship between their efforts and student outcomes. This was reflected in the remarks of the history department head — *"people go into teaching because they believe they can make a difference. This is not driven by a particular approach."*

Two respondents noted that the focus on, or existence of, a professional body of practice may in fact reduce perceptions of efficacy as teachers focus on new learning and are provided with more objective feedback about their professional skills and development. The team leader in the interview group indicated the following: *"I am surprised the scores were not lower in the first few years of the SDM when I was really focused on the curriculum. I felt I needed to reconnect with the kids."* The school's longest standing faculty member noted that teachers in traditional environments *"are comfortable with their teaching irrespective of measured student outcomes."* He indicated that because of this benchmarking of student performance that responses for teachers in the SDM could have been higher.

Questions 3 and *4* pertain to perceptions about the relationship between effort and reinforcement from peers and colleagues. *Question 3* asked for an estimate of days when faculty went home feeling a "low degree of reinforcement" from peers, while *Question 4* pertains to days when faculty went home feeling a "high degree of reinforcement from peers." Teachers in the SDM pilot program reported a higher median score than their Pre-SDM counterparts. For *Question 3*, the median score for teachers in the Pre-SDM program was 7 (30-39%of days) while teachers in the SDM Pilot and Implementation Phases reported a median score of 9 (10-19% of days). Teachers in the Continuation phases reported a median score of 8, (20-29% of days), the same as teachers in the RSM program

who went home feeling a low degree of reinforcement on 20-29% of days. Teachers in the RSM sample reported lower perceptions of reinforcement from colleagues than the SDM teachers in the Pilot and Implementation phase. The RSM median score was equivalent with the Brewster Continuation phase median and higher than the median score for Pre-SDM Brewster teachers.

For *Question 4*, teachers in the Pre-SDM program reported a median score of 4 indicating a high degree of reinforcement from colleagues on 30-39% of days, while SDM teachers in the Pilot and Implementation phases reported a median score of 7 (60-69% of days). Brewster teachers in the Continuation phase reported a median score of 6 (50-59% of days); RSM teachers reported a median score of 5 indicating a high degree of reinforcement on 40-49% of days which was lower than the SDM score in all phases and higher than the Brewster Pre-SDM median. SDM teachers reported higher degrees of reinforcement from colleagues than Pre-SDM and RSM respondents.

When asked to interpret *Questions 3* and *4* interviewees were virtually unanimous in their attribution of higher scores in the SDM to team process and the collaborative problem-solving model employed in the SDM. The responses are reflected in the following remarks from the history department head-*"Teams provide collegial support. They provide a more positive and constructive interaction than a faculty room,"* and the music teacher who noted—*"there is greater solidarity among teachers since the SDM that was not present before."*

Two of the interviewees also identified the structure and the strategies as key ingredients to the process, indicating that the value of collaboration extends beyond simply creating the opportunity to collaborate, but is about how teachers are prepared to be skilled collaborators. The following quote from the science department head reflects the strategic contribution to the collaborative process-*"In*

the team approach we employ strategies for collaborative process and our own professional development. There is an expectation of sharing."

Questions 5 and *6* pertain to perceptions about the relationship between effort and reinforcement from administrators. *Question 5* asked for an estimate of days when faculty went home feeling a "low degree of reinforcement from administration." For *Question 5*, Pre-SDM reported a median score of 3 indicating that they felt a low degree of reinforcement on 70-79% of days, while SDM teachers in Pilot, Implementation and Continuation phases reported a median score of 7 indicating that they felt similarly on 30-39% of days. RSM teachers reported a median score of 8 indicating that they felt a low degree of reinforcement from administration on 20-29% of days.

Question 6 asked for the percent of days faculty went home feeling a "high degree of reinforcement from administration." Pre-SDM teachers reported a median score of 3 indicating a high degree of reinforcement on 20-29% of days, while SDM teachers in the Pilot phase reported a median score of 5 indicating a high degree of reinforcement on 50-59% of days. In the Implementation and Continuation phases the median SDM score was 4, which was the same as the RSM sample indicative of a high degree of reinforcement on 30-39% of days. RSM teachers felt a low level of reinforcement on a smaller percentage of days than teachers did in the Brewster Pre-SDM, and on a larger percentage of days than teachers in the SDM pilot phase.

The interview responses to *Questions 5* and *6* were more variable. Respondents noted that the evaluation of classroom practice can work both for and against administration, dependent upon the perception of the teacher, the way in which they react to feedback and the way that feedback is shared. For example, the history department head noted that-*"Because evaluation feedback is not always* positive (inferring that by assigning value there is a risk of negative reaction when

the feedback is corrective). *Feedback is instant as opposed to a closed door classroom in many schools."* Three interview respondents also noted that in the Implementation phase of the SDM there was a perception that the focus of administration was on "getting faculty to implement" new procedures, processes and practices, something that may result in a diminished sense of support from administration. The following quote from the team leader reflects this position- "*There was the perception that faculty are told what to do- getting people to implement new things. It is getting to the point now where the administration is supportive- the evolving role of team leader is also helping*." The music teacher offered the following remark with a similar theme- "*The focus was on critique, getting program into place, fear of change. Fewer people feel unreinforced* (now). *Now there is a lack of bias and lots of truth."* The science department head's remarks reflect the importance of the way individual faculty members perceive evaluation -*"There is a positive structure in the SDM when evaluation is owned by the teacher. It can be a long list of things that are difficult to accomplish for others."*

Question 7 asked faculty to rate their degree of instructional autonomy on a 9 - point scale that ranges from "none" (1) to "absolute" (9). For this item, Pre-SDM teachers had a higher median score (8) than the SDM Pilot program teachers (7) and teachers in the Implementation (6) and Continuation phases (6.5). RSM teachers reported a median score of 7 indicating that non-SDM teachers perceived a higher degree of autonomy than both the RSM teachers and SDM teachers in all phases.

The question on perceived faculty autonomy also evoked a range of responses from interviewees. Several faculty members reported that while the body of practice and curriculum model was defined in the SDM, faculty still had significant autonomy in the design and development of instruction, in the

management of the classroom environment and in the team process. The following quote from the team leader reflects this position-*"Teachers have freedom in developing content in the department. There is a loss of autonomy in the development of lesson plans. Technology allows greater freedom. Can't close the door which may account for the reduction in autonomy."* The music teacher noted that the acceptance of the concept of a body of practice was fundamental to perceptions of autonomy -"*People have autonomy within a structure. A classical composer follows certain rules and the structure is freeing. Teaching practices are defined and your work with them is completely autonomous."* The language teacher noted that the perceived loss of autonomy is a likely initial perception that changes as teachers become more involved in the curriculum development process- "*Loss of autonomy may be an initial reaction. Whenever people begin curriculum* (development) *they recognize the ownership. It is your's!"*

Question 8 asks faculty to rate the time spent on "substantive, solution focused conversation" with colleagues on a 9 - point scale. The scale ranged from "none" (1) to "60+ minutes per week" (9). The median response from the Pre-SDM teachers was 7. Teachers in the SDM Pilot phase reported a score of 8 while in the SDM Implementation and Continuation phases the median score was 7. RSM teachers reported a median score of 5 indicating that in all phases Brewster teachers felt that they were more frequently engaged in substantive solution-focused conversation than their RSM counterparts.

Question 9 dealt with the extent to which meetings provided opportunities to discuss in professional, problem-focused and problem-solving terms – substantive instructional issues at some length (20 minutes or more). Again, respondents indicated their opinions on a 9-point scale with 1 being "never" and 9 being "always." The Pre-SDM program teachers reported a median score of 4, lower than their SDM Pilot (6), Implementation (7) and Continuation phase counterparts

(7). The RSM study respondents reported a median score of 5 indicating that the SDM teachers felt that their meetings provided greater opportunity for instructional problem solving than their Pre-SDM and RSM counterparts.

The final *Question 10* of the survey asked faculty to rate the overall supportiveness of the faculty culture. The scale was 1 to 9 with 1 being a "low level" and 9 being a "high level." Pre-SDM teachers reported a median score of 6 while teachers in the SDM Pilot, Implementation and Continuation phases reported a median score of 7. The RSM respondents reported a median score of 6, the same as Pre-SDM teachers at Brewster. Total median scores on the RSM survey for each group were Pre-SDM (57), SDM Pilot (72) SDM Implementation (69) Continuation (68.5) and RSM (65), indicating that in Pilot, Implementation and Continuation phase's SDM teachers reported more positively than both Pre-SDM and their RSM study counterparts.

Discussion

Overall, the results of the study indicate there were differences in perceptions of faculty culture that covaried with the Implementation of the SDM at Brewster Academy. The total median score in each of the survey occasions was somewhat higher than that reported by teachers in the Pre-SDM program at Brewster and the RSM study. However, the most significant outcome of the study was the normalizing of the faculty culture during and subsequent to a comprehensive reform effort that includes a transformed set of professional expectations. While restricted to one case, such a finding is nonetheless encouraging given the conjectural state of reform efforts and the broader climate of resistance to school reform.

Faculty in all groups perceived a relatively strong relationship between their efforts and student outcomes (*Questions 1 and 2*) for the majority of days. This was

relatively consistent across Pre-Model, SDM and RSM data with the RSM group reporting a higher score. The responses for each of the SDM conditions is encouraging, given the model's radical departure from prevailing independent and public school norms of practice.

The follow-up interviews indicated that a belief about "making a difference" is central to the decision to be a teacher irrespective of paradigm or approach. However, given that the criteria underpinning this belief is in most cases absent of many of the professional initiatives associated with the SDM, this finding is especially interesting. It is fully conceivable for example, that we could have found a diminished relationship between effort and outcome given the challenge of the new teaching role at Brewster and in the absence of an accepted external normative culture of practice that would provide external validation of those new approaches(Elmore, 1996). This is especially the case in the Implementation stage when faculty members were developing facility with the many aspects of the program. The fact that SDM teachers responded in a manner that was similar to their RSM and Pre-SDM counterparts suggests the normalization of the relationship between effort and outcomes under a comprehensively transformed set of expectations for teacher expertise, productivity and accountability. We see this finding as evidence supporting the assumption that school cultures can be inclusive of an integration of beliefs about professional practice as well as personal values, traditions and history.

Differences were more apparent for items that pertained to the relationship with peers and colleagues (*Questions 3 and 4*) where the scores for teachers in the SDM Pilot and Implementation Phases were higher than those were than Pre-SDM and the same or slightly higher than for RSM respondents. Every interview respondent attributed the difference between Pre-SDM and SDM to the strong emphasis on teamwork in the SDM. The collaborative approach in the SDM

program also stands in significant contrast to the more personally autonomous approaches to teaching in many schools and especially those of independent schools. Two interviewees noted that the benefits associated with collaboration extend beyond the opportunity for faculty to work together. They reflect the approach taken in the SDM to provide faculty with collaborative problem-solving and instructional decision-making skills. Both the survey and interview responses support the positive effects of collaboration. SDM participants focused on the collegial benefits of the approach in a manner that supports beliefs about the positive contribution of collaboration to faculty culture and the empowerment of teachers (Chance, Cummins & Wood, 1996; Dimmock, 2000; Feldman & Paulsen, 1999; Fullan, 1997; Little, 1997).

The SDM respondents in both the Implementation and Continuation Phases were more likely to perceive a high degree of reinforcement from administrators than their Pre-SDM counterparts and indicated a higher number of days when they felt a high degree of reinforcement. They rated the levels of reinforcement lower than faculty in the RSM sample. The role of administrators in the SDM is configured to allow more active instructional leadership in the areas of active instructional problem solving and evaluation (Bain & Ross, 2000, Dimmock, 2000). Our faculty interviews revealed that the role of administrator and evaluator were inextricably connected and that perceptions of faculty regarding support from administration were very much connected to perceptions of faculty about the evaluation process. As such, we did not expect that faculty would necessarily feel more supported. Given the traditionally autonomous culture of schools and the greater accountability associated with the SDM, it is understandable that the role of administration could be construed as a less positive one, at least by some teachers. The fact that this did not occur to any great extent (when compared to the benchmark sample of RSM schools) is encouraging.

We believe that faculty perceptions of higher levels of support by administrators are both desirable and possible. This should be expected as a future goal and outcome given the significant expenditure of energy on professional growth and evaluation in the model and in the normalization of a professional culture of practice in the school as reflected in the continued evolution and consolidation of the portfolio process for faculty career progression. Interview respondents also indicated that it is easy for administrators to be perceived as managers of implementation in a change process where support becomes subordinate to ensuring that a new program element is in place. Further devolution of responsibility for the evaluation process to the department head and peer level is an initiative currently under way that may exert an influence in this area.

In both Implementation and Continuation phases, SDM teachers rated their amount of autonomy as lower than their Pre-SDM counterparts. This was not unexpected although the relatively small difference between the perceived levels of autonomy between the groups represents a particularly important finding. The scope of the SDM reforms at Brewster, the traditional high value placed on autonomy by teachers, especially those in independent schools, and the widely acknowledged and powerful resistance to school change initiatives (e.g., Elmore, 1996; Sarason, 1990; Sarason, 1996) would suggest that perceptions of large reductions in teacher autonomy could reasonably be expected with such a comprehensive set of reforms. Despite the significant impact of the SDM on the curricular life of teachers, there was a relatively small, perceived reduction in perceptions of autonomy. The interview respondents shed further light on this finding suggesting that while there was considerable definition in the curriculum design model, faculty were free to create within that approach and as such, may not perceive a loss of autonomy. What is clear from this result when considered in concert with the data on the implementation integrity of the SDM described earlier, is that a normative culture of

practice can be established in a school using the SDM without adverse effects on perceptions of autonomy. This is especially encouraging given the absence of a broader normative culture of practice in the field at this time.

The responses to *Question 10,* which pertained to the overall supportiveness of the faculty culture, provided important corroborative feedback to earlier items on the level of reinforcement received by teachers and the relationship between effort and outcome. Participants in the SDM rated the cultures higher in all conditions indicating that not only did the SDM maintain comparable perceptions about culture under transformed conditions but improved perceptions of that culture in the summative area of faculty support. Responses to this item further highlight the importance of collaboration and the devolution of decision-making in the SDM.

The SDM continues to be a transformational experience for Brewster Academy. The design approach visited, reconsidered and altered significantly many of the assumptions that underpinned Brewster's traditional program and that of independent schools in general. The model changed what it means to be a school, a teacher and a learner. When viewed within this broader context the results of the study provide a reason for optimism about Brewster's reform and design-based reforms in general, as they show that despite the well documented resistance to school reform efforts, the SDM resulted in positive perceptions of contribution to students and colleagues under these transformed circumstances and higher perceptions of supportiveness overall.

This finding is especially relevant when viewed within the broader context of other evaluation studies of the Brewster program which have shown increases in student achievement (Bain & Ross, 2000); reductions in disciplinary incidents (Smith & Bain, 1999); increases in student retention (Bain & Palmer, 1998); technology skill (Bain, Hess, Jones & Berelowitz, 1999); and technology related student achievement (Bain, Huss, & Kwong, 2000). We recognized from the

beginning of the process that the intersection of the SDM with the highly personalized and idiosyncratic nature of faculty culture in an independent school could result in a volatile outcome. We believed that it was altogether possible to create a better school for students without making it seem better to faculty. While there was disequilibrium and faculty turnover during the process, the emergence of a normalized culture with a transformed level of professionalism is both gratifying and important.

The results of this study begin to forge an important direct link between previously established student achievement gains (Bain & Ross, 2000), and the more collaborative work environment that is characteristic of the SDM program. This outcome has only been established indirectly in previous research (Dimmock, 1993). Continued research on the SDM will focus on making connections between those studies of process and product factors in the SDM Implementation at Brewster in order to more fully understand the relationship between teacher perceptions and behavior, student performance and faculty culture. The results also suggest areas in which there is considerable potential for further improvement in the design, especially as it relates to the reinforcement from administration and in capitalizing on the instructional leadership resource in the SDM program.

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Table 1:

Median scores for the Brewster Program in all Phases and the RSM Survey

Question No.	Pre SDM™	SDM™ Pilot	SDM™ Imp	SDM™ Con	RSM
1.	8	8	8	8	9
2.	7	8	7	8	8
3.	7	9	9	8	8
4.	4	7	7	6	5
5.	3	7	7	7	8
6.	3	5	4	4	4
7.	8	7	6	6.5	7
8.	7	8	7	7	5
9.	4	6	7	7	5
10.	6	7	7	7	6
Total:	57	72	69	68.5	65

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