

Report Study of the Four-Period Schedule for Anoka-Hennepin District No.11

Carol Freeman, University of Minnesota, Geoff Maruyama, University of Minnesota (December 1995)

Executive Summary

During the school year 1994-95, the Center for Applied Research and Educational Improvement (CAREI) conducted a study of block scheduling for the Anoka-Hennepin school district. Two high schools, Champlin Park and Blaine had a 4 period schedule and two, Coon Rapids and Anoka, had a 7 period schedule. A prefatory comment needs to be made. As we look at these comparisons of 4 and 7 period day schools, we need to remember that we are talking about 4 good schools.

Diverse research methods were used, including a teacher survey, student survey, classroom observation, focus groups, interviews, examination of school records, and analysis of district achievement test data.

A literature review of block scheduling and school reform and restructuring, discussions with district and school officials, and an initial teacher survey guided the study.

I. School Demographics

Students in the four high schools are basically comparable demographically. A higher proportion of teachers in the newest high school, Champlin Park, are relatively new to teaching, and, of course, all teachers had three years or fewer of experience in the new school.

II. School Participation

Relying mainly on interview data, 4 period schools report fewer behavior and discipline problems. Comparable attendance, suspensions, and dropout data were not available. Teacher attendance data showed no pattern by schedule.

III. Student Attitudes

The survey of student attitudes found that student attitudes were more positive in the 4 period schools across a number of dimensions. They included school climate, engagement during classes, attitude toward schoolwork, and ratings of teachers and the methods the teachers use. On student safety, there were not meaningful differences.

When the student responses are broken down for level of student performance as assessed by self-reported GPA, the higher achieving students consistently respond more positively. More importantly for the current focus, within all levels of achievement, students in 4 period day schools view schools more favorably than do students in 7 period days. This finding occurs despite the fact that grades are higher in the 4 period schools, which makes the low achieving students in 4 period schools a more extreme group.

Interview data on climate, including comments on the 10 minute passing time, was very supportive of the 4 period schedule.

IV. Teacher Attitudes

There are two distinct patterns of findings that emerge from the teacher survey. First, teachers in 4 period schools believe that their school schedule allows them to do their job much more effectively

than do teachers in 7 period schools. The dimensions rated include facilitating student achievement, maintaining order, fostering quality education, and improving their work life. Second, more general teacher attitudes about their school environments also favor the 4 period days. The 4 period day teachers respond more positively when rating community, collaboration with peers (which is rated relatively low in all schools), respect and support, influence they have, and the effectiveness of their approaches. With respect to perceptions of being overworked, there were no differences between schedules.

Interview data give support to the survey data results. There is general agreement that teachers know their students better in a 4 period school. Teachers in all schools report not having time for collaboration although they differ on the extent to which they attempt to collaborate. Teachers in 4 period schools report greater attempts to collaborate. Teachers in 4 period schools report they work as hard but have less stress. Teachers in all schools voiced a desire for more professional development focused directly on needs related to making the schedule change and continuous assessment of how work is going.

V. Classroom Observational Data

The observational data provide a description of the methods and approaches used at various time points during the class period (narratives for classroom observation) and our ratings of the overall engagement level of the students. The methods and approaches data seem to show a trend toward less lecture and more small group work in the 4 period day schools. Engagement ratings were higher in the 4 period classes, and remained relatively high throughout the class period.

Interview data seem to reinforce the classroom observations, for teachers say that the 4 period day allows greater opportunity for teachers to vary the way they do things, to engage in more effective teaching strategies, and to increase the effectiveness of all teaching strategies. Teachers, particularly in foreign language, perceive that students do retain skills over gaps of time between courses depending on the degree of their original learning.

VI. Curriculum Opportunities and Issues

Students in 4 period schools spend more time in classes and less time in study halls than 7 period students. 4 period staff report advantages in the schedule for students of all achievement levels.

Issues related to curriculum loss in some core subjects has lead to a dialog in the district about what should be taught. Making these adjustments is the most difficult problem identified by the study.

VII. Student Achievement

Students in 4 period schools report getting higher grades than do students in 7 period schools. On district criterion referenced tests, the district report of percentages of mastery tends to favor the 4 period schools in number of objectives mastered. These findings would seem to support perceptions in interview data from staff in 4 period schools that more students are doing better under the 4 period schedule. In contrast, a deeper examination of 4 math areas shows no apparent differences in means on district tests. Once again, when students are grouped by quartiles of their Iowa Tests of Basic Skills quantitative scores, there are no consistent differences in favor of either schedule. Finally, examination of school aggregate scores on ACT college admission tests show no discernible pattern related to school schedule.

What can be said definitively is that the 4 period schedule does not adversely affect student achievement on district course objectives and on teachers' course expectations. It is more difficult to

address issues of whether one schedule allows for more curriculum coverage or one schedule allows for greater depth and retention. Those questions were not examined here.

Background

During the summer and fall of 1994, the Anoka-Hennepin school district and the Center for Applied Research and Educational Improvement (CAREI) discussed the feasibility and parameters of an evaluation of the high school schedules then in use in their four high schools. Meetings were held between CAREI and district officials during October 1994 to develop a proposal for the evaluation. During November, the proposal was presented for feedback to central administration and the four building principals. Data collection began during December 1994 and took place during the 1994-95 school year.

Schools

The Anoka-Hennepin school district has four high schools: Anoka High School, Blaine High School, Champlin Park High School, and Coon Rapids High School. Two high schools, Champlin Park and Blaine, had implemented a 4 period day schedule. Champlin Park adopted a 3 period schedule when it opened in 1992-93, and both Champlin Park and Blaine switched to the 4 period schedule the fall of 1993. Anoka and Coon Rapids were in their second year of 7 period days. Anoka, Blaine, and Coon Rapids all had been on 6 period days prior to fall of 1993. As of fall of 1995, Coon Rapids has also switched to a 4-period schedule.

Goal of the Evaluation

The goal set by the district was to assess achievement and climate differences between the four period and seven period schedules currently (1994-95) implemented in the district's high schools.

Funding

CAREI sought to minimize the research costs to the district by procuring outside funding from the Spencer Foundation, by using doctoral candidates in the College of Education to assist with data collection and reporting, and by using CAREI K-12 initiative funds.

The Minnesota Department of Education agreed to contribute funds for a specific research component related to student achievement, behavior and perceptions of identified special education students and also students who may not be on an IEP but may be identified as "high-risk."

Unique Research Opportunity

A number of factors made the study a unique opportunity. First, the four high schools are comparable in demographics, resources, and students' past school experiences. Second, the district has uniform criterion-referenced tests tied directly to curriculum goals; therefore, the study can assess achievement tied directly to instruction. Third, there are other features of the schools that allow additional comparisons. Champlin Park, a new school, started the block program when it opened, while Blaine switched from a traditional schedule to the 4-period schedule. The other two high schools were studying block scheduling during the 1994-95 school year to consider a possible schedule shift. As noted above, Coon Rapids High School in fact switched to 4 period days fall 1995. Thus, a comparison of the different schedules with two schools on each schedule could only be done in 1994-95. Future studies, however, will benefit greatly from having baseline data collected during 1994-95.

Research Methods

This study used both quantitative and qualitative research methods. A team of university researchers and staff from the school district collaborated in planning the research design and in creating the instruments for the study. This team met regularly during the planning, implementation, and analysis stages of the study. Initial interviews with the four principals and an open-ended survey of teachers helped guide the study and focus the questions to be answered. All data reported here were collected during the spring semester of 1995.

Research instruments administered included:

1. Teacher survey of all teachers. N= approximately 400. The survey was administered at faculty meetings with each school spring 1995.

Survey items were adapted from the following in order of weight: the Teacher Questionnaire, Center on Organization and Restructuring of Schools, Spring 1992, Madison, Wisconsin; the initial Anoka-Hennepin teacher survey; review of literature on block scheduling; review of literature on professional community; Champlin Park Teacher Evaluation survey; ERIC search of climate and morale surveys; and the Masconomet High School Teacher Questionnaire: June 1991, Appendix F, The Copernican Plan Evaluated, J. M. Carroll.

2. Student survey of all students. N= approximately 8000. Survey administered in classes (Anoka and Coon Rapids) or advisory (Champlin Park) or focus (Blaine) periods spring 1995.

Survey items are adapted from the following in the order of weight: Spring 1992 Student Questionnaire, Madison, Wisconsin; Anoka-Hennepin Independent School District Secondary Student Survey; Masconomet High School Student Survey; video tapes of Blaine student focus groups done by Pam Ringstad, Dean.

3. Classroom Observation

Eight to ten observers together spent one day in each of the four high school. All schools were observed during a single week (Monday through Thursday) of the school year. The goal was to observe all teachers teaching two of their classes. Schools generally knew which week the observation would occur but not the specific day of the week. In one of the 4 period schools, observation occurred on a Thursday which was a day before a three day weekend and was considered a mid-term point for them. Thus, their staff felt that the observation may have underestimated the extent to which innovative teaching was occurring, for there was more testing and closure activities than would be usual.

Each observer observed approximately 5 classes per period, recording the teaching activity going on and the level of student engagement at narrow time points during the class period. In the 7-period schools, observers were to record at 10, 25, and 40 minutes into the class period. In the 4-period schools, observers were to record at 10, 25, 40, 55, and 70 minutes into the class period.

4. Student achievement data

For this report, researchers focused on math classes in algebra I, algebra II, informal geometry, and geometry. District developed criterion-referenced tests (CRT's) were given in

these courses in 1994-95. Student grades were also available, and the, Iowa Test of Basic Skills (ITBS) scores from grade 8 or 9 were also linked to CRT scores and grades.

Also, CRT scores in all available subjects were aggregated for percentage achieving mastery. We were restricted to this choice by the nature of the available information. Student reported grades on the student survey were aggregated by 4 period and 7 period schools for comparison of student grades by schedule.

5. Teacher and student behavior and demographic data

School records were used to look at student ethnic background, attendance, suspensions, dropouts, and transfers and to look at teacher use of sick leave. Teacher surveys were used to collect data on years of teaching experience and number of years in their current school. Student surveys were used to collect data on level of parents' education, whether students had a job, how many hours they were working, and how much time they spent in extra curricular activities.

6. Interviews

Interviews were conducted individually and in groups. The length of these interviews varied substantially from 20 minutes to 1 1/2 hours. Nearly all interviews were audio taped and transcribed. All interview data were analyzed for themes and patterns of responses. Quotes were identified that represented these themes and patterns.

Those interviewed were the following:

- 7-period administrators, deans, and counselors in groups
- 4-period administrators, deans, counselors individually
- all Champlin Park departments
- Blaine social studies, English, math, science, and foreign language departments
- Anoka math and foreign language (partial) departments
- social studies and 3 English teachers in all four schools individually.

Literature Review

For this study, literature was reviewed from two broad areas: (1) block scheduling and (2) school reform and restructuring. Literature on block scheduling is still somewhat limited. There is an extensive literature on school reform and restructuring. The most recent literature focuses more and more on the factors of professional community prevalent in schools where substantial progress has been made to improve instruction and student achievement.

Literature on class scheduling

A typical high school has 6 or 7 periods plus a homeroom and lunch daily, with students taking six or seven courses and teachers teaching five for the 180-day year. Classes are approximately 45 minutes long. Teachers deal with at least 125 students and often as many as 150-160. In proposals like the Copernican Plan (Carroll, 1990), it is suggested that classes be taught in much longer time periods (blocks), such as 85-90 minutes, for only part of the school year. Ted Sizer and the Coalition of Essential Schools argue that structural changes in the school, including lowering the student load for teachers and changing the schedule, are crucial for pedagogical changes to succeed in the individual classroom (Sizer, 1985 & 1992).

A limited amount of literature exists related to block scheduling. In this literature (Canady, 1993 & 1995; Carroll, 1990, 1994a, 1994b; Edwards, 1993; Willis, 1993), there is a consistent set of desired outcomes schools can expect when implementing an extended-period schedule. Following is a list of objectives, from most immediate and expected to more distant and less certain, taken from available literature:

1. Decrease the number of classes students must prepare for and adjust to each term to three or four rather than six or seven.
2. Decrease the number of classes teachers prepare for each term to three rather than five.
3. Decrease the number of students teachers see each term and increase the opportunity to develop rapport, identify students' strengths and weaknesses, and improve achievement.
4. Increase opportunity for student enrichment, advanced study, and remediation through increased course-offering capability.
5. Facilitate opportunity for a greater variety of effective instructional approaches.
6. Increase positive student feelings about their high school experience.
7. Increase student achievement and decrease student failure.
8. Facilitate cooperative teaching arrangements, including team teaching and interdisciplinary studies.
9. Increase released time for curriculum development, evaluation, and staff development opportunities.

Some schools have also found the 4-period schedule to be the best opportunity to incorporate school and community service into the curriculum. Some schools have found that the 4-period day improves utilization of existing resources. Teachers who previously taught five classes can now teach six classes. Classrooms that previously provided six or seven teaching stations can now be used eight times during the school year. If multiple sections of classes are evenly distributed between the fall and spring semesters, only half as many textbooks will be needed. Most schools can (and must) implement the 4-period scheduling option within the financial and staffing constraints of other high schools in the district.

Schools using block schedules have faced concerns about: (1) student retention and continuity in the curriculum for courses that build on previous courses (e.g. foreign languages, mathematics), (2) ninety minutes being too long for some classes (e.g. typing), (3) varying activities within periods so students can "survive" a long class, (4) programming of courses such as vocal and instrumental music, which traditionally have had students for the entire school year, and (5) programming for students transferring mid-year. (Canady & Rettig, 1993 & 1995)

In a recent study of 7 Copernican Plan high schools (Carroll, 1994b) reported a positive impact on student behavior, some improvement in attendance, and significant improvement in dropout rates. Carroll theorized that these results may be due to improved teacher-student relationships and more manageable workloads for both teachers and students.

Literature on school reform and restructuring

The November 1995 issue of *Horace*, publication of the Coalition of Essential Schools, is devoted entirely to "Using Time Well: Schedules in Essential Schools." The Coalition has found that a "host of long-block schedules has sprung up, each with their pros and cons, and schools with experience in trying them are flooded with visitors." They warn that "whether the long block offers salvation or merely this decade's trendy placebo depends more on why than on how the day looks different. Unless the quality of student-teacher interchanges drives the schedule, it seems, schools will simply be putting the old wine of the shopping-mall high school into the new bottles of long blocks." (p. 2)

Conley (1994) writes that though changing the scheduling of instructional time is particularly popular in secondary schools, the schedule is not necessarily "accompanied by the changes in classroom teaching that must occur for any new schedule to affect student learning." (p. 14) There seems to be an assumption that making a structural change will cause a change in content and methods of teaching. Change may, in fact, occur in some classrooms, but there is no guarantee that "alterations in the structure and organization of the school automatically translates into changed behavior within classrooms by individual teachers." (p. 14).

In a recent Educational Leadership interview (Brandt, 1995), Fred Newmann reports on a recently completed 5 year study on school restructuring efforts by the Center on Organization and Restructuring of Schools (Center), which he directs. [Note: The Center's teacher and student surveys were a primary source of items for the surveys used in the Anoka-Hennepin study.] The research focused, Newmann said, on the "effects of innovative organizational structures on what we call authentic instruction and authentic student achievement" (p. 72).

They "found that restructuring can boost student achievement and do it equitably," but they've "concluded that it's not structural changes alone that make for success." "Most restructuring efforts--site-based management, team teaching, cooperative learning, alternative scheduling--are simply tools educators can use to get more authentic learning." Instead, he says, "it's largely culture, particularly

two parts of culture. The first is adults' depth of concern for the intellectual quality of student learning, in contrast to concern for techniques, such as whether to have portfolios or whether to eliminate ability grouping. The second is the extent to which the school creates a professional community that harnesses and develops individual commitment and talent into a group effort that pushes for learning of high intellectual quality." They found "that the level of professional community in a school contributed to authentic pedagogy and to student achievement" (p. 73).

Also involved in the Center's research, Louis and Kruse (1995) proposed a framework they call "professional community" which emphasizes their "belief that unless teachers are provided with more supporting and engaging work environment, they cannot be expected to concentrate on increasing their abilities to reach and teach today's students more effectively" (p. 4).

Their book contains a review of the research base supporting their professional community framework (Chapter 2, p. 23-44). A summary follows.

Professional Community Framework

Potential Benefits of School-Based Professional Community

1. Empowerment: an increased collective sense of efficacy relating to work that results in increased motivation in the classroom. This includes teachers' sense of affiliation with each other, their sense of mutual support and individual responsibility, collaborative work with peers, and expanded feedback mechanisms available to teachers.
2. Personal Dignity: efforts are respected and valued by peers, supervisors, and the public.
3. Collective Responsibility for Student Learning: effective school level accountability systems.

Characteristics of School-Based Professional Community

1. Shared Norms and Values: the fundamental bedrock upon which all other aspects of professional community are built is the school's core of shared beliefs about institutional purposes, practices, and desired behavior. Includes understandings about children, learning, teaching and teacher's roles, the nature of human needs, activity, and relationships, and the school's extended role in the broader community and society.
2. Reflective Dialog: growth is marked by conversations that hold practice, pedagogy, and student learning under scrutiny. Public conversation needs to focus on four topics: academic content, the intelligent use of generic teaching strategies, the development of students, and the social conditions of schooling and issues of equity and justice.
3. Deprivatization of Practice: teachers can share and trade off the roles of mentor, advisor, peer coach, or specialist. Teachers can share and display success and learn from their disappointments in a low-risk environment.
4. Collective Focus on Student Learning: learn how to monitor the connections between use of effective teaching strategies and student learning.
5. Collaboration: Collegial relationships characterized by, for example, mutual learning, discussion of classroom practice and student performance, joint planning of lessons, and

developing common expectations concerning student work and behavior, both within and across work groups.

Conditions that Support School-Based Professional Community

1. Structural

- **Time to Meet and Talk:** time is not only necessary to carry out change agendas, but also essential if innovation is to be maintained. Tacking additional voluntary time onto the ends of already tiring school days rarely works; it must be built into the school day and calendar.
- **Physical Proximity:** opportunities for informal communication can be important in promoting teacher effort on school improvement projects.
- **Interdependent Teaching Roles:** recurring and predictable situations in which teachers work together on teaching, working toward both short-term and long-term goals related to student learning by addressing curricular content, instruction, and other teaching practices.
- **Communication Structures:** regular meetings, teacher networks, electronic mail.
- **Teacher Empowerment and School Autonomy:** individual autonomy is important but high levels may have a negative impact on school-wide improvement efforts. Teachers are empowered as a group to consider the impact of their collective actions and practice on students, and jointly arrive at decisions to limit individual freedom in order to promote the effectiveness of the group.

2. Social and Human Resources

- **Openness to Improvement:** openness to improvement and support for faculty risk.
- **Trust and Respect:** trust and respect from colleagues inside the school and key members of relevant external communities, such as parents and district office staff.
- **Access to Expertise:** intellectual and practical grasp of the knowledge base and skills underlying the field requires access to the expertise of peers, both inside the school and externally.
- **Supportive Leadership:** leadership, whether provided by school administrators or site-based teams, needs to focus efforts on the core issues of shared purpose, continuous improvement, and structural change.
- **Socialization:** processes for inducting new members of the group to maintain a sense of community and strong organizational norms.

Sources

- Brandt, R. (1995). On Restructuring Schools: A Conversation with Fred Newmann. *Educational Leadership*, 53(3), 70-73)
- Canady, R. L. & Rettig, M. D. (1993). Unlocking the Lockstep High School. *Phi Delta Kappan*, 75(3), 310-314.
- Canady, R. L. & Rettig, M. D. (1995). Block Scheduling: A Catalyst for Change in High Schools. Princeton, NJ: *Eye on Education*.
- Carroll, J. M. (1990). The Copernican Plan: Restructuring the American High School. *Phi Delta Kappan*, 71(5), 358-365.
- Carroll, J. M. (1994a). The Copernican Plan Evaluated: The Evolution of a Revolution. *Phi Delta Kappan*, 76(2), 105-112.
- Carroll, J. M. (1994b). *The Copernican Plan Evaluated: The Evolution of a Revolution*. Topsfield, MA: Copernican Associates, LTD.
- Conley, D. T. (1994). Roadmap to Restructuring. *The Eric Review*, 3(21), 12-17.
- Cushman, K. (November 1995). *Using Time Well: Schedules in Essential Schools*. Horace, 12(2).
- Edwards, C. M. (1993). The Four-Period Day: Restructuring To Improve Student Performance. *NASSP Bulletin*, 77(553), 77-88.
- Louis, K. S., Kruse, S. D. & Associates. (1995). *Professionalism and Community: Perspectives on Reforming Urban Schools*. Thousand Oaks, CA: Corwin Press, Inc.
- Newmann, F. M. & Wehlage, G. G. (1995). *Successful School Restructuring: Highlights of Findings*. Madison, WI: Wisconsin Center for Education Research. (Available through ASCD for \$9.95. 72 pp. Stock No. 195254)
- Sizer, T. R. (1985). *Horace's Compromise*. Boston: Houghton Mifflin.
- Sizer, T. R. (1992). *Horace's School: Redesigning the American High School*. Boston: Houghton Mifflin.
- Willis, S. (1993). Are Longer Classes Better? *ASCD Update*, 35(3), 1-3)

Part I. Demographics

A. Student Population

Students in the four Anoka-Hennepin high schools are basically comparable demographically. The available data are those (1) reported by students on the student survey related to parents' education, percent of students' working, hours spent working, and hours spent on extra-curricular activities, and (2) district data on ethnic group membership.

In Champlin Park, students report a slightly higher percent of fathers with some post-secondary education, but there is essentially no difference across schools in mothers' education level.

District data on numbers of ethnic minority students shows a slightly higher percent at Champlin Park (9.8% compared to 4.2%, 5%, and 6.2%), but these numbers are still small.

Students report having a job in nearly the same percent in all schools. Though there are differences in numbers of hours worked, one 4 period school is higher and one 4 period school is lower while the 7 period schools are essentially the same. When the numbers are pooled by schedule, they look nearly the same. Hours spent on extra-curricular activities are higher at Coon Rapids, and numbers pooled across schedules show slightly higher numbers in favor of 7 period schools.

B. Teachers' Years of Experience

The only teacher demographic information collected in this study was teachers' total years of teaching and years of teaching in their current school, both as reported on the teacher survey. Compared to the other 3 schools, Champlin Park, had a higher percent of new teachers (0-3 years) and a lower percent in the middle experience range (4-20 years). In Anoka, there is a slightly higher percent of teachers with 10-20 years than over 20 years of experience compared to the other 3 schools.

Because it opened in 1992-93, Champlin Park teachers had been there at most only three years. Of the three older schools, Blaine has more teachers new to the school, possibly accounted for by numbers who transferred to Champlin Park. Coon Rapids has the highest percent of teachers who are long term (over 20 years) in the building. The three schools other than Champlin Park have about half of their teachers with 10 or more years of experience in the current school.

Although it is difficult to be sure about the effects of years of experience on schedules, the data suggest that Champlin Park may have had a unique opportunity to mold a new culture with all new staff to the school and with the addition of teachers new to the profession.

Part II. School Participation

A. Student Participation

Summary discussion of data

The evaluation team planned to gather data across schedules on dropouts, suspensions, and attendance over a 2-3 year period to see whether any pattern could be detected that might relate to schedule differences. Unfortunately, we experienced unexpected problems in obtaining data that were comparable across sites and over time.

1. Suspensions

It was impossible to compare suspension data across schools because suspension policies and procedures set by each building differ. At this time, schools are making their own comparisons of year to year suspension data. Blaine, for example, made a special effort to classify suspension data from the last year they were using the 6 period schedule and to use similar classifications in the years they have been under the 4 period schedule. Their data show substantial reductions in suspensions. Those data are not included here. There is a sense among administrators, counselors, and deans that suspensions are lower.

2. Referrals

Though schools use computerized activity trackers to record student behavior referrals, there are policy and procedure differences across and within schools with regard to referrals to the office. Administrators, deans, and counselors report having a sense that there is a significant reduction in referrals for misbehavior between classes. They describe hallways as calmer places. They also believe there are fewer referrals from classes because teachers have time to handle problems themselves. When they do problem solve, they find it easier because teachers know the students better.

3. Absences

Consistent data across schools on absences was also not available. Absences are coded by reason for absence and the number of codes differed by school in the summary report available. For example, some schools included field trip absences and others do not.

Staff in the 4 period schools reported that they felt attendance was more important to students under the 4 period schedule because students miss more in a longer class. They thought attendance had improved. Some 4 period teachers, however, did feel that attendance might be worse than ever for lower achieving students.

4. Leaving school and transferring

For analysis of dropout rates, district data on numbers of students leaving schools is included. Data were available only for 1994-95. The data pooled by schedule, 4 period schools and 7 period schools, show a 1% difference (5.2 compared to 4.2) in favor of 7 period schools. Reasons seem to be different by schedule but may be simply differences in the way leaving students are categorized. Students probably would still be called "dropouts" whether reasons are unknown or they quit because of compulsory age.

5. Transfer Issues

The numbers of students transferring in and out of schools are included in this analysis because of special problems students have when moving to a school during the year which has a different schedule. Combining numbers of transfers in and transfers out, there are around 10% of students under either schedule who transfer during the year. Deans and counselors in 4 period schools see it as a problem for students that staff can deal with satisfactorily.

B. Teacher Participation

Data on use of teacher sick leave were examined for two school years (1993-94, 1994-95). The average use of sick leave differs from year to year, but differences do not appear to relate to the schedule.

4 period teachers said in interviews that they thought it was harder to miss school and prepare for a substitute under a 4 period day. At one school, some teachers thought that teachers' absences were fewer than under the old schedule. The data do not support this.

Part III. Student Attitudes

Summary Discussion of Data

A survey of all students (approximately 8000) found that student attitudes were more positive in the 4 period schools across a number of dimensions. (Table III.1) A description of the dimensions follows below. Students in 4 period schools gave higher ratings to their school climate, engagement during classtime, teacher quality, and attitudes toward schoolwork. They found their teachers using more progressive teaching strategies and fewer traditional strategies.

Surprisingly, when students responded to the statement "Some of my classes are just too long," students in the 7 period schools with 47 minute classes agree more often than students experiencing 85 minute classes. (Table III.2) Not surprisingly, 7 period students perceived substantially more often that students come to class late. Passing time is 5 minutes in 7 period schools and 10 minutes in 4 period schools.

4 period students feel much less like they are rushing about. (Table III.2) Staff in 4 period schools describe a sense of calm in their building in contrast to staff in 7 period schools. Agreeing with students' perceptions, teachers in 4 period schools comment that students' attitudes toward coming to school and working are more positive. Teachers describe themselves as more relaxed and they believe their students are consequently better off.

The 10 minute passing time is universally seen as having a positive effect on reducing stress, getting things done, and increasing socialization and humaneness.

In order to compare responses of students performing at different achievement levels, students were asked on the student survey what their grades typically were: mostly A's, mostly A's and B's, mostly B's and C's, mostly C's and D's, or mostly D's and F's. (The final two categories were pooled to keep sample sizes substantial for each category.) On the student survey dimensions, students with higher grades not surprisingly were consistently more positive than students with lower grades under both schedules. Of greater interest is that the differences favoring the 4 period schedule maintain across the 4 categories of grades. Contrary to some speculation that low achieving students would be lost and disengaged in the 4 period schedule, low achieving students in the 4 period schools were more positive than low achieving students in 7 period schools on all dimensions except attitudes toward schoolwork (mostly about homework). (Table III.3)

Data

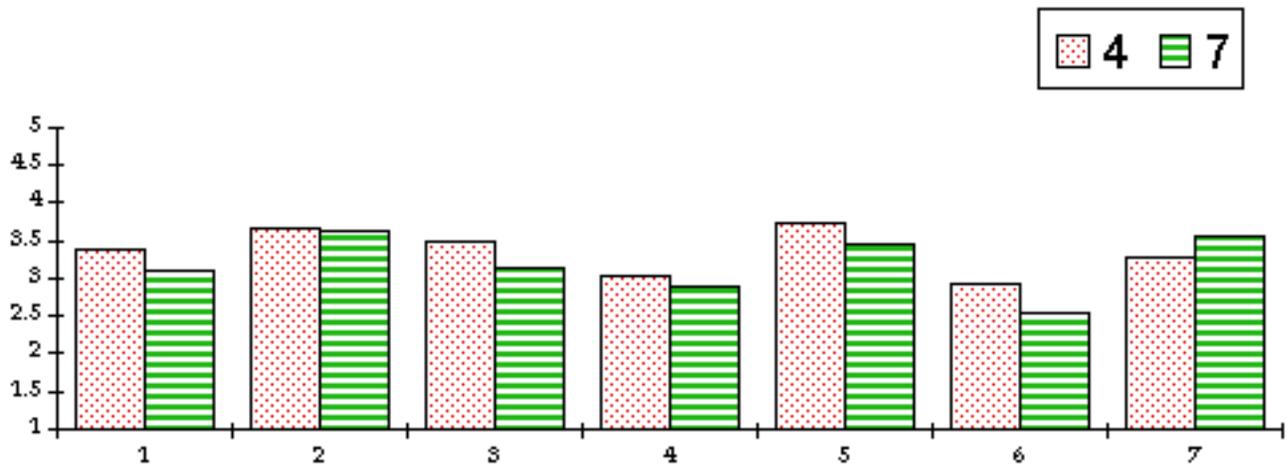
Table III.1 Attitudes of Students on Survey Scales by School Schedule

Scale	4 Period	7 Period	Effect Size ¹
1. School Climate*	3.38	3.10	.44
2. Student Safety*	3.67	3.62	.07
3. Student Engagement During Classtime*	3.50	3.14	.55
4. Student Attitudes Toward Schoolwork*	3.02	2.88	.20
5. Teacher Quality*	3.72	3.44	.44
6. Progressive Teaching*	2.93	2.54	.53
7. Traditional Teaching*	3.27	3.54	.30

* Difference statistically significant at $p < .001$

Students responded to items on a 5-step scale ranging from 1 (strongly agree) to 5 (strongly disagree). Items have been reversed as necessary so that for scales 1-5 higher scores indicate a more favorable attitude, scale 6 high is more progressive, and scale 7 high is more traditional.

¹The effect size is the difference between the means expressed in standard deviation units. This is reported because with the large sample (about 8000), any difference is likely to be statistically significant.



Narratives for Student Survey Scales

1. school climate (10 items, $\alpha = .86$). Assesses student perceptions of respect and spirit within their school; how well people within the school get along with one another; how well they behave.
2. student safety (3 items, $\alpha = .62$). Perceptions of how safe students feel in their school.
3. student engagement/classtime (5 items, $\alpha = .74$). Examines how interested and engaged students are during their classes.
4. STUDENT ATTITUDES TOWARD SCHOOLWORK (4 items, $\alpha = .57$). Assesses how frustrated students are with their homework. For example, having too much homework and homework which they do not understand.
5. teacher quality (10 items, $\alpha = .91$). Student perceptions of how good a job their teachers do at teaching; whether teachers help and care about students.
6. progressive teaching (4 items, $\alpha = .69$). Assesses how often students do the following in their classes: think hard about ideas, have in-depth discussions, participate in a variety of activities, and work in small groups.
7. traditional teaching (2 items, $\alpha = .45$). Assesses how often students listen to lectures and fill out worksheets in their classes.

Note: Scale items were analyzed using factor analysis to assure that they were in fact unidimensional.

Table III.2. Other Student Survey Questions

Note: Measures how much the students agree with statements from (1) strongly disagree to (5) strongly agree.

Statements	4 Period	7 Period	Effect Size
Many students don't care much about learning.	3.29	3.63	.36
Some of my classes are just too long.	2.91	3.34	.37
It's easy to blow off a day of class and not miss much.	2.49	2.96	.41
School is a pretty lonely place.	2.20	2.29	.09
I have a chance to know the students in my classes.	3.85	3.59	.31
Students have time to talk with their friends.	3.68	2.96	.71
It seems like I'm always rushing to get places	2.74	3.94	1.11
A lot of students seem to get to class late.	2.96	3.60	.62

Table III.3. Attitudes of Students on Survey Scales by School Schedule and Student Achievement Levels

Student Achievement Levels

Scale		High	Above Average	Average	Low
School Climate	4 Period	3.54	3.44	3.29	3.01
	7 Period	3.21	3.21	3.10	2.85
Student Safety	4 Period	3.76	3.71	3.64	3.45
	7 Period	3.70	3.66	3.61	3.50
Student Engagement	4 Period	3.80	3.62	3.33	2.86
	7 Period	3.48	3.33	3.07	2.71
Student Attitudes	4 Period	3.22	3.06	2.94	2.69
	7 Period	3.04	2.98	2.83	2.71
Teacher Quality	4 Period	3.94	3.78	3.62	3.28
	7 Period	3.66	3.58	3.40	3.16
Progressive Teaching	4 Period	3.17	2.99	2.78	2.57
	7 Period	2.66	2.61	2.50	2.41
Traditional Teaching	4 Period	3.17	3.29	3.29	3.37
	7 Period	3.40	3.58	3.58	3.51

Note: For scales 1-5 higher scores indicate a more favorable attitude, scale 6 high is more progressive, and scale 7 high is more traditional.

Note: High = mostly A's;
 Above Average = mostly A's and B's
 Average = mostly B's and C's;
 Low = mostly C's and D's and mostly D's and F's.

Part IV. Teacher Attitudes

Summary discussion of data

Teachers in 4 period schools are very positive about the 4 period day schedule. 92% of 4 period teachers prefer a 4 or 3 period (used one year at Champlin Park) schedule over a 6 or 7 period. (Table IV.1) 3 or 4 period schedules were supported more than either 6 or 7 period schedules, and slightly more than 6 and 7 together, among 7 period teachers, but with only approximately 50% of teacher support.

There are two distinct patterns of findings that emerge from the teacher survey. (Table IV.2) First, in response to whether their schedule restricts or enhances a variety of factors, 4 period teachers rate their schedule substantially higher on dimensions of facilitating student achievement, maintaining order, fostering quality education, and improving their work life. (A fuller description of the scales appears following Table IV.2)

A second set of dimensions, related to professional environment, also favor the 4 period day. 4 period teachers respond more positively when rating sense of community, collaboration with peers, teacher influence and empowerment, respect and support, and how much they use different educational activities considered effective. With respect to perceptions of being overworked, there are no differences between schedules. As well as being different by schedule, collaboration is rated relatively low in all schools.

There is variation in responses by departments on each dimension.

Extensive interview data on knowing students, collaboration, teacher morale/work life, and professional development was analyzed. There is general agreement that having fewer students each term allows students and teachers to know each other better. Teachers are better able to meet individual students needs and students are more willing to participate in class if they know each other better. The only exception is among some teachers who teach mostly quarter courses. Not all teachers of quarter courses agreed that they know or remember their students as well when they have them only 9 weeks and have more students over the whole year.

Though teachers understand the value of collaboration with peers, teachers in all schools agree they do not have the time, structure, or tradition of collaboration. Champlin Park teachers established a pattern of collaboration while preparing to open the new school and during their first year when they all had a common prep time. They lament they no longer have time to collaborate in the same way. Teachers recognize the need for collaboration if they are to fulfill their visions for improving education. They suggested structuring expanded time into the school year and summer for a variety of instructional and curricular work. The schedule change was seen by some as a catalyst for change.

Teachers in 7 period schools recognize their schedule causes some of the stress they experience. There is a general feeling among 4 period staff that there is less stress during passing time and during class for teachers as well as students. With their schedule, however, they feel they work as hard or harder to prepare because of the longer period, particularly the first time through the new schedule.

Teachers have many suggestions for professional development activities that they find most helpful. They most often suggest opportunities to talk to other teachers who do what they do both inside their school and outside. They suggest regular times to get together to reflect and reexamine their curriculum and teaching strategies. They suggest providing more opportunity for activities at the department and grade level and less for all-school activities.

To prepare for a change to a 4 period day, they most often mention visiting 4 period schools, bringing in teachers from 4 period schools, and having time to work by department and grade level. Teachers advise schools not to spend all their resources before they begin a new schedule but save some so they have time later to stop and assess. Teachers often voiced their frustration with professional development being scheduled during teaching time; teachers do not like to be gone from their classes.

Data

Table IV.1. Teachers' Schedule Preference (teacher survey)

Question: Which would be your preferred schedule?

N=number answering this question. %=percent of respondents

Schedule	4 period teachers	7 period teachers
	N (%)	N (%)
3	14 (6.6%)	4 (2.3%)
4	181 (85.4)	84 (47.5)
6	10 (4.6)	55 (31.0)
7	5 (2.4)	26 (14.7)
Other (?)	2 (0.9%)	8 (4.5%)

Note: Teachers were not given the choice of a 4 period alternating day schedule. Teachers at Anoka High School were instructed verbally to include that choice in the 4 period category.

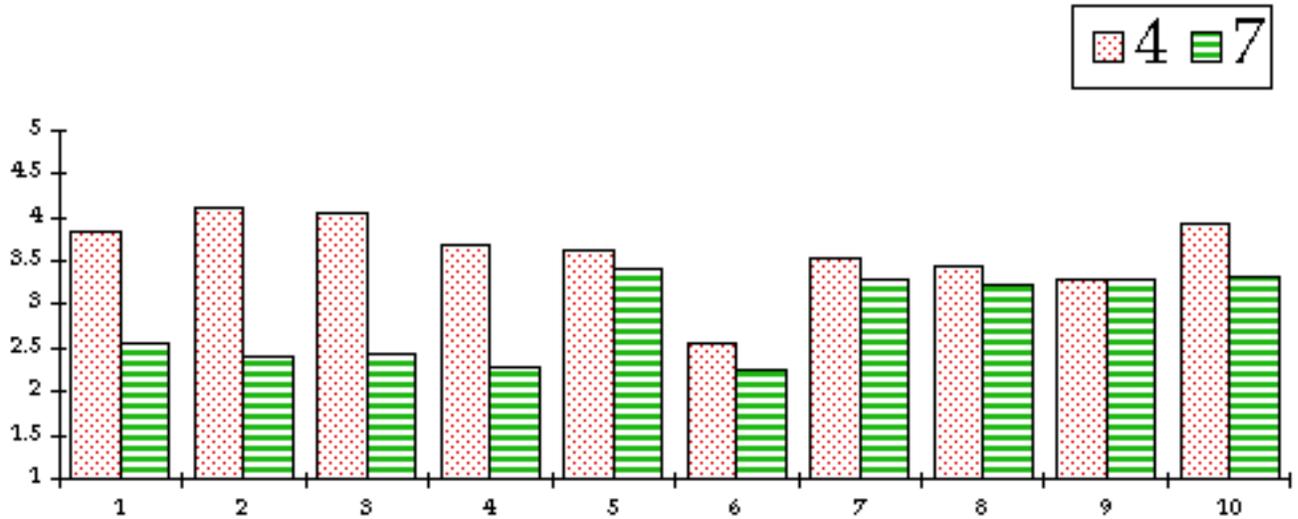
Table IV.2. Mean Attitudes of Teachers on Survey Scales by School Schedule

Scale	4 Period Schools	7 Period Schools	Effect Size
1. Facilitating Student Achievement*	3.85	2.56	1.77
2. Maintaining Order/ Student Behavior*	4.13	2.41	2.26
3. Fostering Quality Education*	4.06	2.43	2.38
4. Improving Teacher Work Life*	3.69	2.29	1.92
5. Sense of Community*	3.62	3.41	.49
6. Teacher Collaboration*	2.55	2.24	.50
7. Teacher Influence/ Empowerment#	3.54	3.31	.31
8. Respect and Support*	3.44	3.22	.37
9. Overworked	3.31	3.26	.05
10. Educational Effectiveness*	3.93	3.32	.87

Note: For all scales, higher scores indicate a more favorable attitude. Responses to items range from 1 to 5.

* Difference statistically significant at $p < .001$

Difference statistically significant at $p < .01$



Narratives for Teacher Survey Scales

The first four scales assess the teachers' perception of the impact of their school schedule on the educational environment in their school.

1. facilitating student achievement (6 items, $\alpha = .88$). Impact that the school's schedule has in helping students do the type of things that facilitate achievement.

2. maintaining order/improving student behavior (4 items, $\alpha = .88$). Impact that the school's schedule has in improving student behavior in the school.

3. fostering quality education (10 items, $\alpha = .96$). Impact that the school's schedule has in helping the teacher do things that provide a higher quality educational experience for the student.

4. improving teacher work life (6 items, $\alpha = .89$). Impact that the school's schedule has in keeping the teacher's work load manageable and in improving teacher morale.

Scales 5-9 assess the teachers' perception of their school environment.

5. sense of community (11 items, $\alpha = .81$). Assesses overall perceptions of togetherness, cooperation, and pride within the school.

6. teacher collaboration (5 items, $\alpha = .67$). Examines how much collaboration takes place among teachers.

7. teacher influence/empowerment (4 items, $\alpha = .71$). Teacher perceptions on the amount of influence they have in school decisions.

8. respect and support (11 items, $\alpha = .82$). Assesses teacher perceptions of having the opportunity & support to fully use their abilities. Also feelings of respect and support from colleagues and administrators.

9. over worked (2 items, $\alpha = .62$) Beliefs that work often interferes with life outside of school.

Scale 10 measures how frequently teachers report using different educational activities and approaches.

10. educational effectiveness (6 items, $\alpha = .80$). Examines how frequently teachers have been able to use instructionally effective techniques in their classrooms (e.g., having students relate classroom content to their own experiences).

Note: Items within scales were subjected to factor analysis to assure that each scale was unidimensional.

Part V. Classroom Instruction

Summary discussion of data

The study focused on teaching strategies and classroom instruction in two ways: the teacher survey and classroom observation. On the teacher survey, teachers were asked what instructional approaches they use in a typical week in a TARGET class (one class period that they teach on a regular basis where things are working well). Teachers in the 4 period schools reported spending less time lecturing and giving individual instruction, but more time in small groups. (Table V.1)

Similar results were found through classroom observation. The observation focused on categorizing the type of activity and measuring the level of student engagement in that activity. Almost all teachers were observed in two of their classes during one day of observation in each school. The data, with all observations aggregated, show less use of lecture and more use of small groups in 4 period schools. Math, science, English, social studies, and foreign language are graphed separately and show considerable variation from one department to another in teaching strategies used. (Figure V.1) Student engagement levels are consistently higher throughout the class periods in 4 period schools. (Figure V.2) These departments were selected to include math and foreign language, about which there are questions of student retention of material over time gaps between courses. The other core subject areas were selected for comparison, science to compare to math, and English and social studies to compare to foreign language .

The interview data are more specific about what teachers feel is different about classroom instruction in a 4 period day. Seven period teachers identified constraints on what they can do because of short periods including problems with trying to continue activities across 2 or 3 days.

Four period teachers emphasize the importance of providing a variety of activities and actively engaging the students. Teachers find it easier to do activities which allow students to apply knowledge, to engage in "real" decision making and to pursue the topics in-depth. The longer class period allows for greater continuity of work especially when many activities can be completed in one day. Group work and lab work "really work" with the longer time period. Students can make more effective use of technology.

Four period teachers find paperwork much easier to handle. Though papers come in faster, it is easier to give better feedback when there are fewer papers. Teachers feel they can respond more effectively to students' individual needs.

With regard to retention over a time gap between consecutive courses, teachers of foreign language in the 4 period schools feel students are not hurt by the schedule. There may be gaps in recall among students at the entry point of the next level, but the gap disappears quickly for those students who actually knew the material when they studied it earlier.

Data

Table V.1 Percent instructional approaches (teacher survey)

Question: Consider all the lessons you have taught so far this year in your TARGET class. What percent of the instructional time in a typical week do you spend on these instructional approaches?

<p>Lecture=lecturing (or instructing to the class as a whole;</p> <p>Whole groups=leading whole class discussions (or activities);</p> <p>Small groups=students working/practicing in small groups;</p> <p>Individual=students working/practicing individually;</p> <p>Instruction= providing instruction to individual students while others work individually;</p> <p>Other. (Should equal 100%.)</p>		
Instructional approach	4 period	7 period
Lecture	17.84%	23.14 (21.8)%
Whole Groups	20.82	21.32 (20.1)
Small Groups	21.58	18.16 (17.1)
Individual	21.56	20.71 (19.5)
Instruction	12.95	16.81 (15.9)
Other	4.61	5.85 (5.5)
Total Percent	99.36%	105.99% (99.9)*

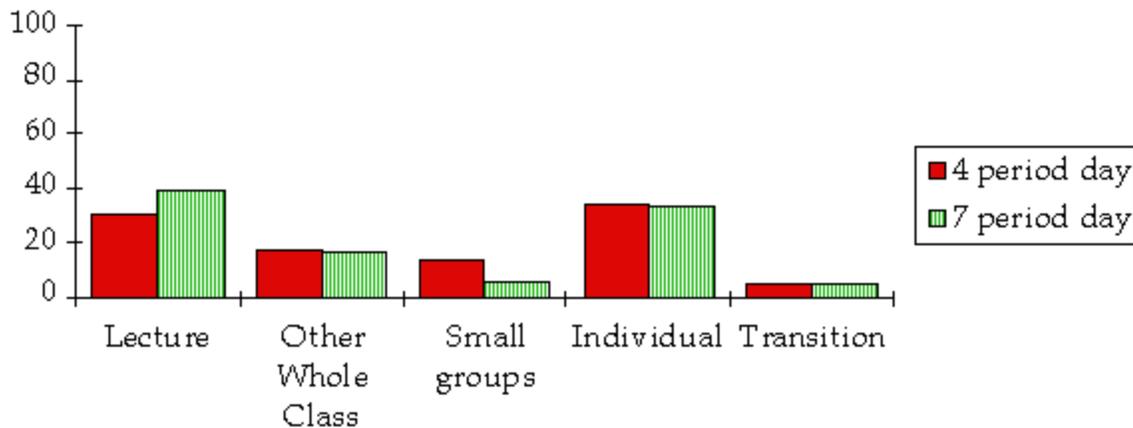
*Percentages adjusted to sum to approximately 100%

Narratives for Classroom Observation Scales for Figure V.1

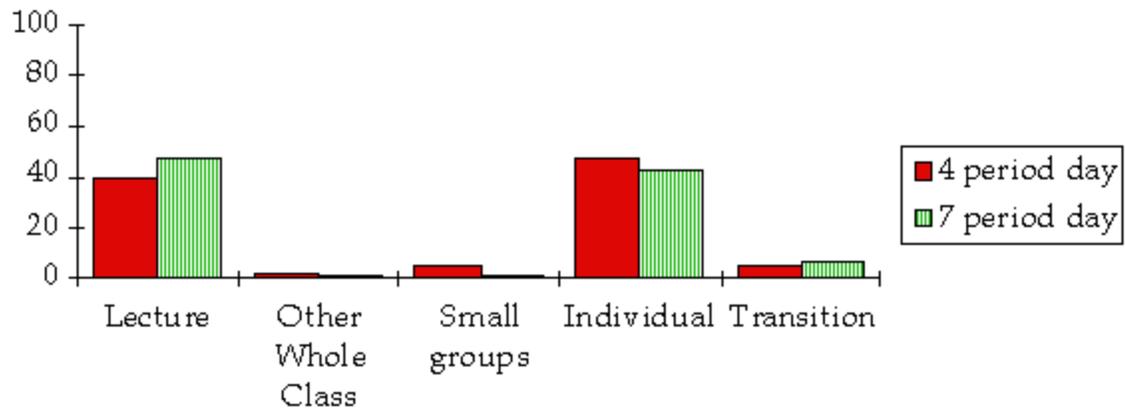
1. Lecture: Includes lecture and teacher-led discussions or question and answer format.
2. Other Whole Class: Includes simulations/debates, media, guest speakers, student presentations to the whole class and other whole class activities.
3. Small Groups: Includes small group activities, such as cooperative learning.
4. Individual: Includes students working independently on assignments with or without teacher interaction.
5. Transition: Includes observations during which the class was between activities for longer than a minute (could be at the beginning or end of the class as well).

Figure V.1 Percentage of Teaching Strategies Used in the Classroom by School Schedule

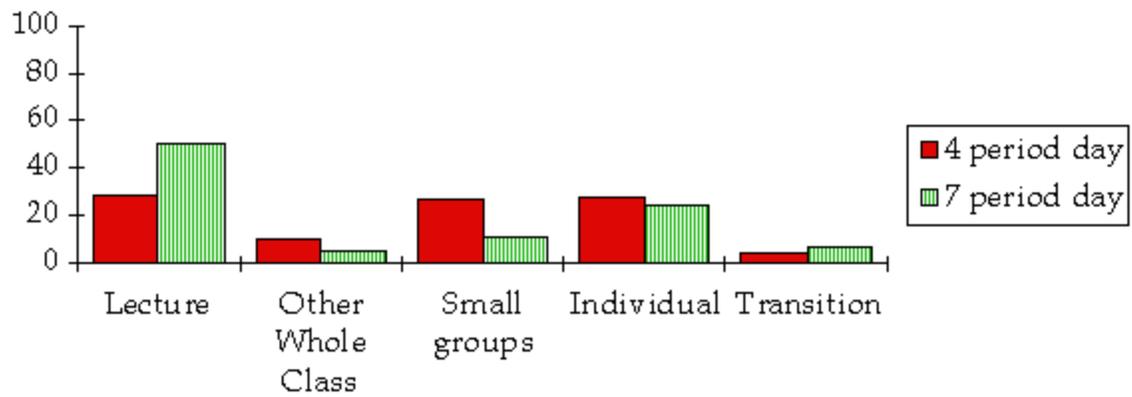
Total



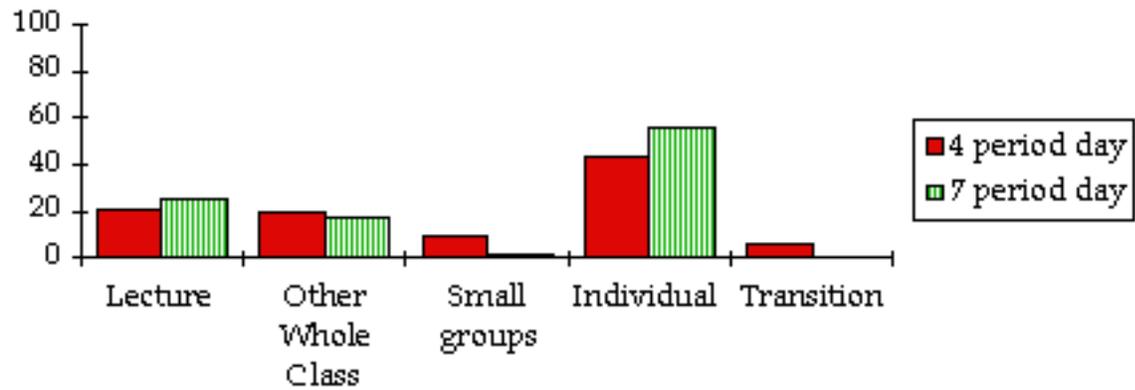
Math



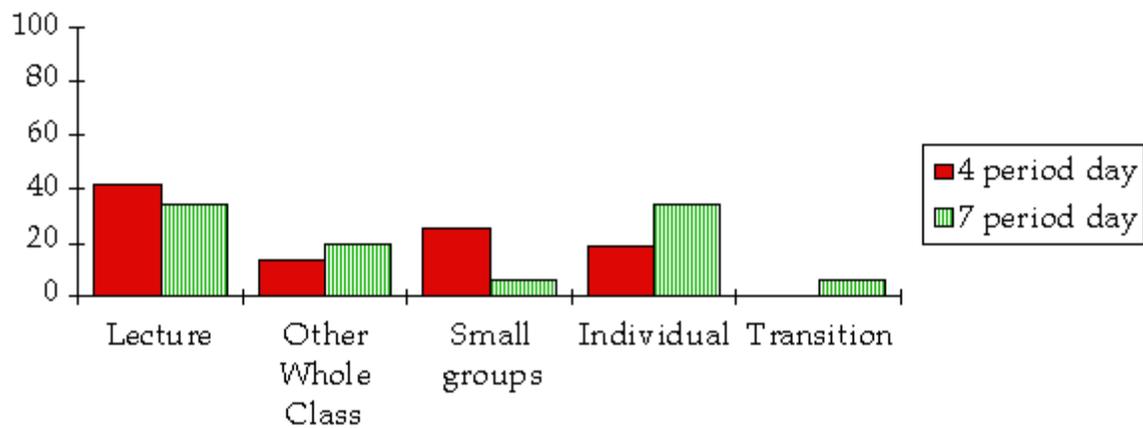
Science



English



Foreign Language



Social Studies

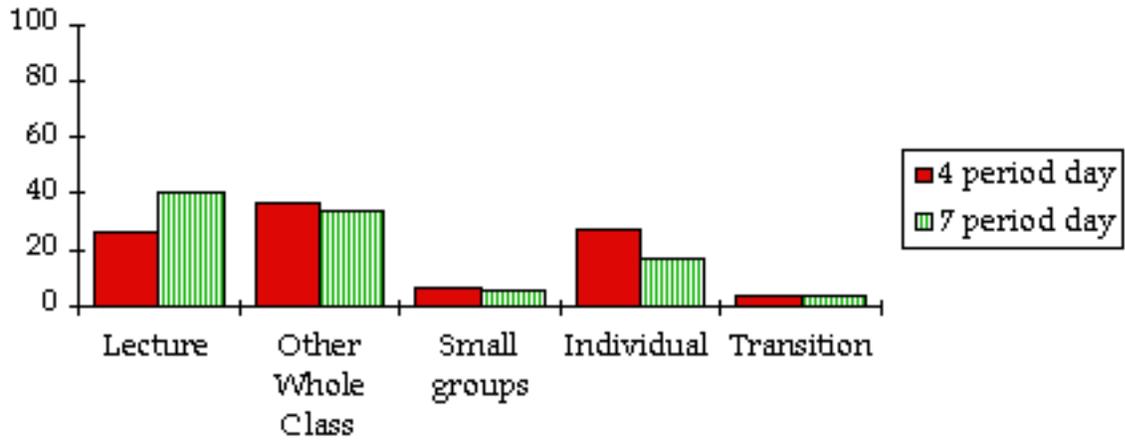
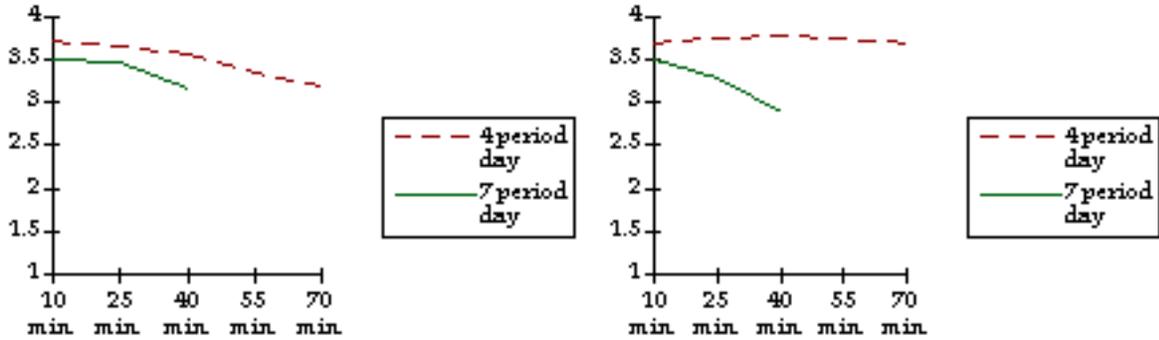
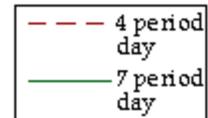
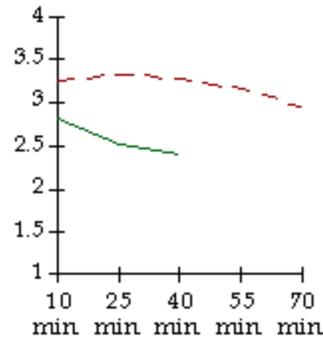
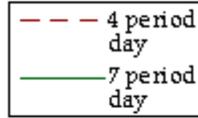
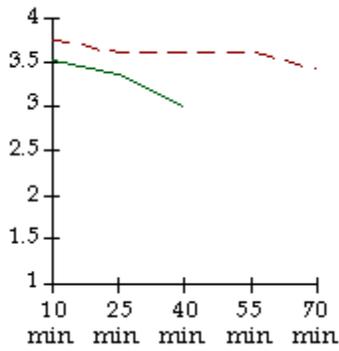


Figure V.2 Level of Student Engagement in the Classroom by Time Intervals

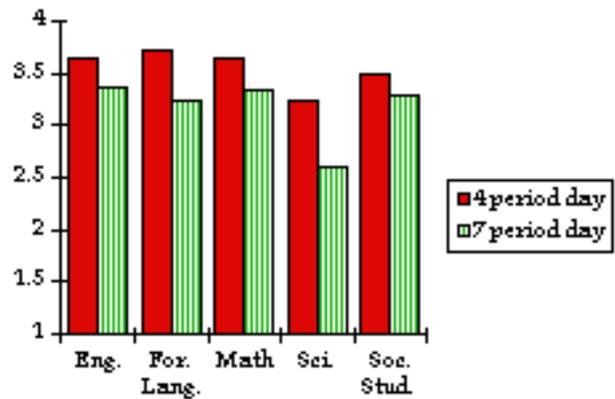
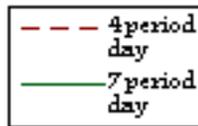
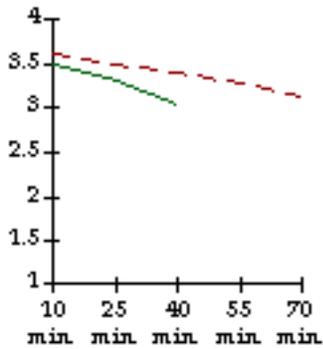
English Foreign Language



Math Science



Social Studies Mean Student Engagement Levels by Schedule and Subject



NOTE: For the Level of Student Engagement Scale 4=almost all engaged, 3=many engaged, 2=some engaged, 1=few if any engaged.

Part VI. Curriculum Opportunities and Issues

A. Opportunities and Choices

Summary discussion of data

A primary reason Anoka-Hennepin high schools changed from 6 period to 7 or 4 period schedules was to provide students more opportunity for electives. Table VI.1 contains the average semesters of classes a student was registered for in the 1994-95 school year by subject area and by total semesters. Students in a 7 period day are scheduled for, including study halls, 14 semesters; in a 4 period day, 16 semesters.

Students in 4 period schools are taking 2.5 to 3 semester equivalent classes more than students in 7 period schools. Fewer 4 period students register for study halls than 7 period students. Even after adjusting for the lesser amount of time 4 period students spend in each semester equivalent class (90% of 7 period classes), 4 period students spend on average the equivalent of 1 to 1.5 semesters more in classes.

Four period schools report that 90% of their students chose not to take a study hall. More 7 period students may be electing study halls because theirs are shorter, and they may find taking 7 classes too much for them.

Staff, particularly counselors and deans, comment that choices are opened up for students, students' needs can be better met, and there is more variety each term for students. Top achieving students benefit, they say, by having more opportunity for advanced classes. Low achieving students benefit by having more classes with which to peak their interest and by having more opportunities to start over.

Data

Table VI.1 Classes Taken by Students by Semesters

Notes on the Table:

Numbers are from Spring 1994 registration tallies in Anoka, Blaine, and Champlin Park, and from the October 1994 activity readout at Coon Rapids. There may well be some inaccuracies. Some unaccounted for semesters may be PSEO (post secondary options program) students and other off campus programs.

Classes categorized as vocational, home ec., or industrial arts seem to vary somewhat from school to school.

Sem = Average Semesters per Student

Numbers in columns by school are the number of semesters for which students were registered.

Table VI.1(continued)

Subject	7 per. school	Sem	4 per. school	Sem	4 per. school	Sem	7 per. school	Sem
Art	845	.30	1409	.52	828	.36	733	.29
Business	1951	.69	1984	.73	2171	.95	1292	.52
Drivers Ed	510	.18	387	.14	366	.16	388	.15
Eng/Lang. Arts	6320	2.23	5512	2.02	5476	2.39	5110	2.03
Foreign Lang.	3163	1.12	3474	1.27	3074	1.34	2492	.99
Health	736	.26	1037	.38	593	.26	615	.25
Home Ec	935	.33	1514	.55	1990	.87	913	.36
Industrial Arts	1587	.56	2811	1.03	2278	.99	1540	.61
Mathematics	5167	1.83	5528	2.02	4769	2.08	3849	1.53
Music	1450	.51	1639	.60	1907	.83	889	.35
Physical Ed	2745	.97	3375	1.24	2511	1.10	2447	.97
Reading	90	.03	128	.05	152	.07	121	.05
Science	4529	1.60	5123	1.88	4327	1.89	3889	1.55
Social Studies	6141	2.17	7066	2.59	5214	2.27	5055	2.01
Vocational	599	.21	1372	.50	260	.11	618	.25
Other/Spec. Ed, etc							843	.34
Total Semesters of credit classes	36768		42359		35916		30794	
Total Students - October 1994	2830		2730		2293		2515	
Total semester classes per student		12.99		15.66		15.52		12.24
*Total semesters X 90%				14.09		13.97		
Study Halls	1734	.61	874	.32	550	.24	1858	.74
Total Semesters accounted for	38502	13.60	43233	15.84	36466	15.90	32652	12.98

*The 4 period day semester is 90% of the time of a 7 period day semester.

B. Curriculum Issues

Summary discussion of data

A big issue identified in the interview data relates to curriculum. Nearly everyone agreed adjustments must be made in the curriculum when changing to the 4 period day whether because of loss of time or because of change in teaching strategies or decisions to explore some areas in more depth. A 4 period day schedule differs in total minutes of instruction per course, being approximately 23% less than the 6 period schedule and nearly 10% less than the 7 period schedule. Some staff were concerned about how standardized test scores may be affected in the long run by this loss of time.

It is interesting, however, that on the teacher survey, 4 period schedule teachers reported themselves better able to teach the content required by the district.

Table VI.2. Able to Teach Required School Curriculum (teacher survey)

Question: To what degree do you feel your current school schedule restricts or enhances Being able to teach the content required by the school curriculum? (1=restricts to 5=enhances)

	4 period	7 period
Mean	3.28	2.72

The big question debated is "What should be taught?" Some suggest this question will be addressed as the district prepares for the new graduation rule. The dialog revolves around issues of content vs. process, depth vs. breadth, chronology vs. themes, and essential vs. comprehensive. Some feel the former balance between required and elective courses should be restored, adding to requirements in the four core areas of math, science, social studies, and English.

Staff suggest districtwide coordination and review of curriculum is needed. Some feel the amount of time for some courses should be changed; others believe the solution is to drop topics and activities from the courses. Some would like more flexibility for individual schools to add electives whether other schools offer them or not.

But, whatever the viewpoint or the recommendation, staff agree that this is an issue that needs to be addressed.

C. Homework

Summary discussion of data

Frustration over the amount of homework students do came up voluntarily more often in interviews of 4 period staff. Results of the teacher survey (Table VI.3) found 4 period teachers thought their schedule enhanced having homework being completed and turned in considerably more than 7 period teachers did. However, some 4 period teachers were disappointed they could not give as much homework as they expected to under this schedule. Some felt it would help them move through their curriculum faster.

Four period and 7 period students report doing nearly identical amounts of homework every day. 4 period teachers report requiring more homework per week than 7 period teachers require, and 4 period teachers say they require homework more days in the week.

Part VII. Student Achievement

Summary discussion of the data

On the student survey, approximately 17% more students in 4 period schools identified themselves as receiving mostly A's or mostly A's and B's than did students in 7 period schools. (Table VII.1) Interview data is consistent; staff perceive that students are doing better and are getting higher grades. Most kids have told them they are getting higher grades.

The Anoka-Hennepin district has districtwide curriculum in all subject areas and has developed criterion referenced tests in many courses. During 1994-95, district criterion referenced tests (CRT's) were administered in 5 math, 1 social studies, 2 language arts, and 2 science courses. The district reported the percentage of students who achieved mastery on each objective in each course. For purposes of this study, percentages of mastery of all objectives have been roughly aggregated for each course and by schedule. (Table VII.2) Neither standard deviations nor individual scores by objective were available for this analysis, and, therefore, significance testing could not be done. Looking at percentage of mastery aggregated by course, there is no consistent pattern related to schedule. When looking objective by objective, 4 period schools collectively have the highest percent of mastery on 63 objectives compared to 47 objectives for 7 period schools. This may support the perceptions of staff in 4 period schools that more students are doing better. (Student achievement interview data) The data seem at least to establish that students in 4 period schools are not doing worse than their peers in 7 period schools, and that the loss of time for each course in 4 period schools has not adversely affected achievement of district course objectives. For example, when looking at algebra I and algebra II results, there is no evidence of accumulated deficit from loss of time or curriculum in 4 period schools, which have the highest percent of students achieving mastery in algebra II.

For this study, further analysis of individual CRT scores was done of four math courses, algebra I and II, informal geometry, and geometry. First, individual student raw test scores on each course CRT were transformed into percent correct on that course test. An average of those percent scores was examined by schedule. (Table VII.3) The results reinforce the point that there are no meaningful mean differences in performance by schedule. In algebra II performance, which may have students with a gap between consecutive courses, there are no apparent differences between schedules. These results do not provide evidence either that achievement was adversely affected by the 4 period schedule or that the 4 period schedule fosters higher achievement in these math courses.

Table VII.4 attempts to look at student progress from a fixed starting point. Students' quantitative scores from their eighth grade Iowa Tests of Basic Skills were matched with CRT scores for as many students as possible. Students were placed in quartiles based on their Iowa Basics quantitative ranking. This allowed for a comparison of ability level at the eighth grade to achievement on the CRT. Unfortunately a number of students are lost for these analyses because they either did not have an Iowa Basics' ranking or a CRT score. This is especially true for the algebra I data. Using simple effects statistical tests, which compares the school schedule means at each ability level, there were 4 significant differences. These differences were found for algebra II in the top quartile, informal geometry in the bottom quartile, and Geometry in the second and third quartiles. All four of these differences favored the 4 period day schools. Some apparent mean differences, for example in the top quartile for algebra I, were not statistically significant because of the small sample size and different standard deviations.

In Table VII.4, where sample sizes are substantial and there is statistical significance, they tend to favor the 4 period day. It reinforces the point that the 4 period day is not adversely affecting student achievement in these courses. Further, there is no evidence that low achieving students are adversely affected by the longer class periods. The four statistically significant quartiles do not point to any particular achievement level being advantaged more than others by the 4 period schedule.

Scattergrams were created to try to look at the strength of the relationship between grades and CRT performance. Grades were not available for all students with CRT's. These figures (VII.1) appear in the appendix. These figures show a moderate relationship with correlations ranging from .5 to .65.

Finally, we looked at college entrance test performance, specifically ACT scores. Again, the data fail to suggest meaningful differences related to schedules. These data reflect students who were on a block schedule at most for 3 years. It may be a more meaningful analysis when students have been on the schedule for all four years of high school. Fluctuations in percentage of students who take the ACT test and other fluctuations in school scores may be hard to attribute to any one variable such as the school schedule.

In conclusion, the data tend to show that the 4 period day schools are holding their own. The data examined do not show any clear differences. Though a number of data sources were examined for this study, the greatest challenge in evaluating the 4 period schedule is in determine appropriate measures of student achievement. Interview data include a variety of suggestions from college entrance exams, statewide subject area exams, comparison of Iowa test and CRT's, to student work. In fact, our study included most of these, the exception being statewide subject areas exams. Some teachers in both 4 and 7 period schools suggest the CRT's do not reflect the difference in curriculum coverage possible under the two schedules. Examination of a broader range of skills

would be an important part if looking more broadly at student learning. Other 4 and 7 period teachers discuss the opportunity for more depth and better initial learning in longer class periods. A second area for future study would be to assess untapped skills like inquiry or critical analysis.

Data:

Table VII. 1. Student Self-Reported Grades (student survey)

Students were asked: What grades do you usually get? (Numbers are the percent of those who responded in each category - total 100%.)

	4 Period		7 Period	
	School A	School B	School A	School B
Mostly A's	25%	23%	15%	11%
A's & B's	39	36	32	30
B's & C's	28	29	35	40
C's & D's	7	10	15	15
D's & F's	1	2	3	4

Table VII.2. District Criterion-Referenced Tests

Note: Percent mastery = an average of the percent of students that mastered each objective. The two 7 period schools are averaged and the two 4 period schools are averaged.

Highest percent = number of objectives a school on this schedule had the highest percent of students attaining mastery.

Course	# Objectives	4 period percent mastery	7 Period percent mastery	4 period highest percent	7 period highest percent
Pre-Algebra	10	57.85	47.10	9	1
Algebra I	15	42.33	44.87	4	11
Algebra II	7	53.09	47.00	7	0
Informal Geometry	12	53.75	40.96	12	0
Geometry	17	67.80	66.00	7 (2 ties)	8 (2 ties)
Geometry performance	4 questions	64.75	47.63	4	0
Social Studies - Grade 9	9	61.95	54.11	8	1
Soc. Stud. 9 performance	1 question	86.5	92.00	0	1
Language Arts - Grade 10	8	59.32	59.94	1	7
Language Arts - Grade 12	8	60.88	63.88	7 (1 tie)	0 (1 tie)
Physical Science	8	36.50	42.19	0	8
Chemistry	14	49.25	49.36	4	10

Table VII.3. Mean CRT scores in four math subjects by schedule

Math Course	Measure	4 Period Day		7 Period Day	
		Mean	n	Mean	n
Algebra I	CRT	.58	805	.60	645
Algebra II*	CRT	.69	328	.66	281
Informal Geometry	CRT	.54	209	.51	194
Geometry	CRT	.75	632	.73	543

Note: The mean scores on CRT's can range between 0 (no items correct) and 1.00 (all items correct), and are the percent correct.

*Algebra II scores are only for one of the two 7 period high schools.

Table VII. 4. Mean Math CRT scores by School Schedule and Rank on Iowa Basics

Math Course	Iowa Basics Quartiles	4 Period Day Schools			7 Period Day Schools		
		mean	st dev	n	mean	st dev	n
Algebra I	1st (Bottom)	.49	.13	39	.50	.11	51
	2nd	.55	.15	45	.57	.15	27
	3rd	.61	.14	34	.66	.07	8
	4th (Top)	.61	.15	17	.73	.05	5
Algebra II	1st (Bottom)	.58	.20	12	.50	.21	7
	2nd	.63	.13	29	.57	.14	42
	3rd	.62	.17	71	.62	.15	116
	4th* (Top)	.75	.15	61	.69	.14	126
Informal	1st* (Bottom)	.52	.10	60	.48	.09	60
Geometry	2nd	.54	.09	32	.55	.08	48
	3rd	.58	.09	19	.53	.12	29
	4th (Top)	.54	.24	6	.65	.18	2
Geometry	1st (Bottom)	.62	.15	63	.65	.13	56
	2nd*	.69	.14	105	.65	.15	93
	3rd*	.78	.13	128	.75	.13	158
	4th (Top)	.81	.09	70	.79	.12	65

Note: * Significant difference between the 2 schedule's CRT scores at $p < .05$.

Note: CRT score is a percentage correct score (i.e., a score of .49 means that they got 49% of the items correct).

Interview Data

Behavior interview data

Staff in all schools agree that behavior problems in the hallways will be fewer when there are fewer passing times. Said a police liaison, "That's when you have conflicts and that's when you have things stolen." Added a 7 period administrator, "Referrals coming out of the general hallway traffic are clearly going to be less when we only ask our students to move 3 times a day."

Other ways that staff in 4 period schools see changes in behavior include:

"We know our fights have gone down. Suspensions have gone down."

"General disrespect problems out in the commons. . .harassment problems, having somebody pull a fire alarm. . .those have decreased for me."

"Squabbling about teacher personality conflicts is not anywhere to the degree that I was used to previously." "They know it's for a short amount of time, that it's only going to be 18 weeks. . .[they] can make it."

"Childish and underdevelopment problems of 9th graders. . .never happened [at this school.] A distinctively different delivery system. . .just undermined all the pickiunish kinds of things that kids normally get into."

One reason often given to account for improved behavior in the school is that students "are not feeling the stress of that rushed schedule." The most often cited reason is that teachers and students know each other better. Because they are together longer each day, they have "to work harder at getting along."

Another advantage voiced by a counselor was, "When I deal with a discipline situation or a problem, I have a much better picture of what's happening, as the teacher does, because they've gotten to know the student."

Both teachers and assistant principals (or deans) find that teachers are better able to handle conflict within the classroom rather than referring problems on to the office. One teacher said, "Part of what allows me to have a better rapport with the kids and maintain control with less escalation of the conflict is the fact that I get to know these kids a lot sooner."

An administrator said, "Teachers will be more able to keep students in class because they'll have the freedom to spend some time with the disruptive students instead of just saying, 'I don't have time for this, get out of here and get down to the office.'" Teachers can have students sit down with them for a minute and talk or take the student out in the hall and say, "What's going on and how are we going to work this out."

When 4 period teachers are asked about what to do with that "class from hell" for 85 minutes, they quote what Wasson, Colorado, teachers told them, "No child can act out for 85 minutes." They have found that to be true too.

In the seven period schools, there was frustration over class disruptions with students having passes to go "in and out and in and out and in and out." The two four period schools found decreased class interruptions because students can take care of business during the weekly focus or advisement period or during the 10 minute passing time.

Attendance interview data

In one of the 4 period schools, the attendance policy was an issue. Staff suggested that a typical 10 day absence rule does not work when each day is the equivalent of two days of class. This school was frustrated with having no limit on excused absences.

In the 4 period schools there was some feeling that "more kids find that they just cannot afford to take a day off from school because they move too fast." Some thought attendance had improved. Others thought those students with poor attendance were as bad or worse unrelated to the schedule. Teachers commented that students with poor attendance "fall into that point of no return a lot quicker." In the 85 minute period,

students miss more concepts and teachers find it hard to catch them up because "they can't learn that much new information in one shot."

There was some mention of families going on vacations being a bigger problem under the 4 period schedule. There are more requests for homework for students after only two days of absence whereas such requests might have come after a week under the old schedule.

Transfer interview data

Deans and counselors in the 4 period schools agree that there are problems for students who transfer in during the school year. Some, however, see transferring to and from a block schedule as no more difficult than transferring to and from a trimester system. One counselor said, "It is not always easy, but we make it work and in most cases we can figure out how to put them into those classes they are doing well in."

Another counselor thought it might get better as more high schools are going to 4 period schedules. "It's a big issue for the student, and I just have to figure out how to make it work."

Teacher attendance interview data

One 4 period teacher thought, "Attendance is much better, teacher attendance is much, much better than it ever was before. . .because you can't be sick. . .I don't want to miss on a focus day, cause it is only a 70 minute period and I can do that standing on my head."

Substitute interview data

A teacher in the 4 period day said, "The one con we always talk about is how difficult it is to prepare to be gone. . .[and] leave lesson plans for 85 minutes. You cannot just read the story and answer the questions. It's not going to fly, and you have to have substitute teachers. . .who can teach English. They can't just come in and babysit for 85

minutes unless you happen to be doing a film that day, but that is rare so absences are really tough."

Another added, "Being sick is absolutely a pain. It's easier to come and die than to get a sub."

Climate interview data

Seven period day staff:

Several staff commented about the pace of the day: "Classes are too short, too rushed; there's too much stuff going on." "The 7 period day is a stressful pace, takes a toll on staff and students. If they miss a day, they miss 7 classes." Staff see that "a longer teaching period, fewer classes every day, will result in a more calming atmosphere and would probably be a better teaching situation." "People are looking for a change."

One teacher said, "If you sit through a lunch period, with 25 minutes or whatever it is to leave a classroom, get through a crowded hall, stand in a line to get your lunch, shovel it down, and get back to your class, it is symbolic of what the day is like."

Another teacher said, "A 7 period is just horrible for kids feeling good about what they are doing and the pace at which they are doing it. . .taking time to smell the roses as they go along the way to becoming a good, full human being."

A different view was expressed by a 7 period teacher who wrote, "I believe that a 7 period day is best BECAUSE of the pressure, BECAUSE of the intensity, BECAUSE of the hectic pace. Other schedules may be more agreeable to teachers and students alike, but not as much learning takes place."

4 period day staff:

Staff at 4 period schools commented on school climate and the pace of the day: "It calms the frenetic behavior that occurs in schools." "There is a sense of calm in the

building. There is a sense of can do. There is a sense of going fast, but we've got time because we've got an extended amount of time in every class."

There were many comments about how the schedule affects students' attitudes toward school and classroom work:

Students "actually feel better about going to class."

Students have a better attitude about coming to school because they are not so stressed."

"When the kids get into the class for 85 minutes, kids are kind of there, whether they love being there or not. There isn't the 'I'm going to be out of here really soon' attitude. . . There isn't the clock watching. . . [rather] 'I'm going to be here a while and whatever we're doing, I'm going to just do it.'"

"I see much more sense of community in the classroom because the kids come in and say, 'we're going to hang here for 90 minutes.'"

Some comments related to how the schedule affects teacher behavior and what effect that has on students:

"I can be relaxed. The students sense that, and then they're relaxed. . . They are just calm. . . If they feel comfortable, they will do the work for you."

"Students say the teachers aren't as strict. They are more laid back and more relaxed."

"It just was more pleasant, and kids said the teachers weren't as crabby."

"What a teacher brings to a classroom, literally, what you bring walking in the door every day, will transfer to your students in all sorts of ways, whether they will withdraw or act out or mirror your own emotional state. What you bring in manifests itself, I believe, in the students. . . one's own personal and emotional state

. . .comes to the essence of what teaching is."

10 Minute passing time:

Many comments were made by staff about the importance placed by both students and teachers on the length of passing time. One teacher went so far as to say, "If you tried to do the 85 minute day without that 10 minutes, I don't think it would work as well."

Many say the 10 minute passing time is a major factor in the reduced stress for kids and teachers. Said one administrator, "People who come in say the hallways are orderly, quiet. With the 5 minute passing time we used to have. . .it was a zoo." Students "can actually walk and not feel so harried." Students can do a "whole potpourri of things:" "go to the bathroom," "socialization," "attendance," "nurse's office to take their medication," "transcript issues and turn in their college apps," "stay after and talk to the teacher, get to class early and ask something," and "just clear the cobwebs, relax a little bit."

Many of the comments were expressed in terms of the humaneness of passing time:

"Kids need time for socialization. They have that during the passing time."

"We put kids in a social setting and then don't allow them to socialize. We force them into our agenda."

"Kids appreciate a system where they are treated more humanely. They aren't running from this class to that class knowing that they can't make it and having this crabby teacher snarling at them when they walk in late."

"They're better human beings by the time they get to my class."

Other positive consequences of the 10 minute passing time:

"Students are less likely to be tardy to class and they are more likely to be focused and ready to get on task when the bell rings."

"There are far fewer requests for laboratory passes."

They can "give off some energy and do that without getting into trouble."

Many say, "It would be hard to go back. . . I don't know how kids would make it. I don't know how teachers would make it. We were so easily acclimated to the 10 minute passing time." Teachers too "are not so rushed." One teacher said, "You know teachers move and they actually have time to get from one place to another, and they have time to go to the bathroom, too, just like the kids." Another teacher said, "I like that transition period. . . you have time to clean up what you have been working with in one class and still have the time and the sanity to have everything set up before the next class comes in so that you aren't doing that at the beginning of the period."

"Knowing students" interview data

4 period respondents generally reported that "staff feel much more comfortable working with 80-85-90 students at any one given time, even though over the year, they may work with more students than they would have under a more traditional schedule." That "makes a very large difference in terms of conferencing, assessing, doing report cards. . . You are able to identify what works best for students much faster because you're not thinking about such huge numbers." Teachers say they "know the kids' skills and deficiencies sooner." An English teacher said, "I really feel like I know them as writers better than I ever had before."

Said one teacher, "Small group activities work so much better because the teacher gets to know the student so well in a four period day, and the students get to know the teacher. . . It just seems to be a better discussion because it seems like you're more of a close knit family type thing." Added another teacher, "Kids. . . felt that they could offer comments in class because they knew each other better. They knew the teacher better and they could take that risk."

Several interviewees talked about their relationships with students as people. "You understand them better." "I feel a closeness, or whatever the word is, toward the students I have in class now, more than I did when I had five [classes] come in every

day." "I can know them in a couple weeks and be able to talk to them as human beings in that short time." "You have a chance to talk to students. You get a chance to deal with them on a one on one level."

One drawback was voiced by teachers of quarter courses. One said, "The only downside is that most of my classes are one term classes. . .and so by the end of the year, I really cannot remember if I had a student last fall, or last spring. At the time during the quarter, I think I am more aware of who they are and their abilities."

Another said, "I was sold on the idea by other teachers who had done this that you get to know your students better, but that's not been my experience. I think I get to know them pretty well, but I think in the 18 weeks course, I knew them a little better. . .but I have 4 sets of these kids as opposed to 2. . .throughout the year. I can't come up with the names like I used to. I think it is because I have them for only 9 weeks."

Collaboration interview data

Time:

Teachers in all four schools cite time as the biggest obstacle to collaboration. Teachers in 4 period day schools said: "We don't get as much talk time as would be nice." "It's a time factor. It's so hard to get together even with people in your own department and share ideas over a long term."

Seven period day schools were most adamant that they do not have time. "In our eleventh grade office. . .people are pretty good collaborators. . .But we just don't have time. . . There's not time built into our day, ever, to do things like that."

Even with the 4 period day "it is difficult for teachers," said a 4 period administrator. "Teachers need to use their time to get prepared for the next day. Unless they would have it specifically scheduled in by not having a duty, I don't think there is a great deal more opportunity for that than there was before. . .They are so busy getting their own

thing together, the day isn't designed to have all kinds of extra time to sit and chat and stuff. It is difficult for two people to have the same time off."

Teachers in the 4 period day talk about how fast they are moving through the curriculum. "We are going a 1000 miles an hour. We don't have a lot of time to evaluate what we are doing and whether it is really meaningful or not and. . .revising the curriculum, finding better ways to deliver the curriculum than we are."

Department support:

Characteristic of all four schools, one teacher said, "As far as having dialog about what works. . .that happens within departments or it doesn't happen at all." In three buildings, teachers' offices are grouped together by department. Coon Rapids is the exception. One teacher there said, "You have people teaching the same subject who are on opposite sides of this building so the chance of seeing them once a week is exceptional unless you have the same lunch period." Many teachers in Coon Rapids have their offices in their classrooms.

One teacher talked about the barriers to collaboration across departments. "Just the financial structure. . .the departments have their budgets. . .It's real tough to do a lot of collaboration if you worry about whose budgeted materials you are using. . .I personally see departmentalization as an evil. . .it is something that divides and hurts collaboration among the groups."

The following quote characterized one of the more positive departments: "I don't think anyone feels that they are an island. . . It is the nature of our office, the desks being where they are, and the people being fairly verbal. . .you can vent and you can also get excited and people go along with you both directions, which is good. But, as far as actually sitting down, and saying, okay, tell me how you handled this strategy, I don't think there is a lot of that."

No structure for collaboration:

"There is no opportunity for the department to work together. . .At the grade level where we should be doing that kind of cooperation, there is no structure . . .and when you look at teachers' individual schedules, it's just not possible. We just haven't come around to be able to recognize the value of teachers sitting down together and sharing and working with each other."

"There doesn't seem to be any vehicle to include that in a day, week, a month. . .Part of this is due to an aging staff, that we do our own thing."

"Human nature being what it is, you have to create time and some structure for that if it's likely to happen."

"I think there was a certain degree of anxiety about going to the 4 period. . . So we aren't yet relaxed enough to talk with each other and collaborate."

Catalyst for collaboration:

One teacher saw the switch to the 4 period day as a "trigger event." "It's a window of opportunity for people to share things. . .so they could get a diversity of materials. The need to have variety is a big plus. . .In adult learning. . .[you need] a trigger event to change."

"The need to do different things may cause staff to interact more about what they're doing, to interface more, more metacognitive talk."

Champlin Park's experience:

There were comments unique to Champlin Park which was a new school in 1992-93. Many teachers there talked about the curriculum development time they were provided. It was a time when departments and groups of teachers sat down together. The common experiences cited by many staff are best summed up by one person: "The first year we had a 3 period day. . .all the teachers were in the building at 7:00 and it was just fantastic. . .a common prep . . .with everybody being new to this situation. A

tremendous amount of collaboration was done. . .then we went to the 4 period day last year and that was a little different. Now we've gone to uncommon prep hours. . .maybe we established such a good base that first year that that spirit continues."

Champlin Park staff often say that what "is unique is the people who came to this building for the most part came because they wanted to try new things

. . .as a result, people are willing to go an extra step as long as you don't ask them too often, and they're more willing to sit down and try to develop some collaboration. . . Changes aren't going to happen very well unless you have colleagues to bounce things off of."

However, they feel they no longer have the time. "We don't have enough [collaboration time]; our prep periods are all over." "We try within grade level, but that goes on at a minimum with the person who sits next to you who happens to teach the same thing." "There is much more willingness and desire than there is time." "Now it doesn't work. . .you're just kind of on your own. . .I give people stuff. . .you are so busy doing your own thing. . .I'm buried, you just use your prep to get work done so you don't have to do it at home."

More collaboration needed:

A 4 period English teacher said, "The district has the same vision as we do, but I don't think they have the same idea of what we need to do to accomplish these things. I guess my criticism is that there just isn't enough time even to share with each other or to do anything else we need to do. . .They want us to do all these things, but they need to hear what we need in the way of time and sharing and those kinds of things."

Another 4 period teacher said, "One of the big needs I see is for collaboration. Everybody acts as an independent contractor. . .That there is a lack of collaboration is why we have more damn work to do. . .and it is not that we don't want to collaborate. The system does not allow for that. . .we finally got a half day at the end of every

quarter, but all we use it for is grading. It would be nice if we had that sort of thing just for instructional purposes."

A 7 period teacher said, "We find that things work out better when there is consistency. . . We know that when we can share our ideas and be sure that we are all getting the basic things covered so that when the kids go on to the next grade level, those teachers are happier. So are the students when we haven't all had such a variety of demands placed on them."

Suggestions by both 7 period and 4 period schools:

"The time has come. . . [to] extend the year. . . for planning before they make kids come more days, or extend the day somehow, and make that maybe twice a week with. . . an hour where we specifically plan with people."

"If the 4 period day gives us a sense of not being so oppressively over scheduled. . . [and] if we were to get 85 minute prep periods, then I would be more certain that [collaboration] would happen."

"If we had that week, I say every year. . . We just need to be here and be able to assess what we are doing."

"Some of us talk, but it's not a lot about methodology. I would like to see more of that, maybe peer coaching, mentoring so that we slip into each other's classes to revitalize our teaching."

Teacher morale/work life interview data

7 period:

Representative comments from teachers about their schedule and reservations about the 4 period schedule:

"We are running ragged with this 7 period day."

"No matter how I look at it, it seems like it's a loss for me personally. My day is more rushed [than with the 6 period day]. My sense of achievement is interfered with because I don't ever have a sense of completion. I just feel like I'm rushing pell-mell downhill from the first day of the semester until the end. Really, there's no sense of peace or serenity."

"If we had decent class sizes, if we had a [class size] max that was workable, and if we were given quality curriculum writing time, then I think I would prefer going to a longer period, because I think we could get quite a bit more accomplished."

"I don't know that it's going to get better with 4 periods. . . a year's worth of topics in one semester, that's still pressure. It makes the pace to rush through the day slower, but it doesn't make the pace to go through the curriculum slower."

4 period school stress and morale in general:

One administrator's comment was representative of many administrative and counseling staff: "There is a more relaxed pace. It has improved morale. I work closely with departments. . . if they have complaints or requests they come to me with the nuts and bolts sorts of things, when they are happier and things are going better for them and they feel more in control of what they are doing, they are not in my office complaining, requesting and demanding, and it really has. . . been more productive and creative."

Comments from 4 period teachers include:

"Stress is way down and morale is way up. For some teachers who have been in the business for many a moon, this has really been an invigorating thing; it's been a new challenge."

"I'll teach another eight or ten years in this setting. Whereas if I had remained on a seven period day setting in the junior high school, I'd be ready to quit."

"I think they'd be hard pressed to find a critic who has experienced the difference between a seven period day and a four period day.

"The detractors have taken their shots and I think that the schedule has weathered those. . .After three years into the program, I would be surprised if you found more than 1 or 2 in the staff of over a 100 that will not feel positive about the program, and I think that unique."

Stress and feeling tired:

There were a variety of ways that teachers characterize how tired they are compared to a 6 or 7 period schedule:

"There's less stress compared to what we felt 2 years ago. We're tired but not dead on our feet like we were in the 6 period day."

"I still feel as tired at the end of the day. I still use as much energy throughout the day. You are just not so rushed. "

"I experience a different kind of tired in the 4 period, tired from instructing and helping kids rather than feeling burned out from disciplining kids.

"There is a different kind of tired. If you want to talk about instructional time in the classroom, it feels less tiring. . .The pacing is more comfortable for the kids."

"Everybody's more relaxed with teaching. . .but for preparing, there's a lot of pressure on us to come up with all these things each day."

"It's a high stress job. Even if it is less stress, you are still under stress. "I walk out of here less tired, less sore throats, less eyes itching. . .not having to say something over and over again. . .and the 10 minute period when I can unwind just to settle myself a little bit really reduces the stress."

"The first time through you are a basket case."

"I had students who had me the previous year and then had me here and they couldn't believe I was the same person. And I didn't realize that I was that tense, but apparently, because you have to be very focused, you have to get everything done, you don't have an extra minute or two in the 45 minute period."

Change in work and work level:

"It was certainly hectic to change over and come up with enough to do for 85 minutes for the first few months. . .but now it's so second nature. I'm simply in better shape seeing three groups of kids and not 5. . .I feel I'm not toting as many essays home, but to plan all the activities is still a lot to do. . .Just to see 90 students as opposed to 150 a day does make a difference.

Some teachers say they are working harder:

"Quite frankly, we are working much harder than we ever did before, because we are teaching 6 classes a year instead of 5, and we are teaching 2 years of material instead of 1."

"Speaking for myself, I has doubled my lab prep. Instead of one lab once a year in 5 classes, I'm doing the same lab twice a year in 6 classes."

"Prep time has never reflected how much time it takes to get ready to teach. We feel it more acutely on a 4 period day."

Some teachers are feeling overworked:

"I certainly have seen an incredible expenditure of time and energy on a lot of things to enhance the curriculum. We talked about this in our department. . .just the feeling of exhaustion. . .this spring. My opinion is that you have to be a better, stronger teacher to teach the 85 minute period. You can't go in there and fudge. If you do not have a well-planned lesson, you are going to suffer."

Teachers who teach mostly quarter classes had some special workload issues. "A brand new term the last nine weeks takes a lot of energy." "See we all teach courses in which every term we get new kids." "So we have four beginnings a year."

Some have experienced reverting back to the old schedule:

"We had the opportunity to go back on the so-called 7 period. . . We had a half day of school, so we taught 47 minute periods all four periods in the morning. . . I said, wait minute, I took attendance, and I did a little bit of work with the kids and the bell rang. . . they shouldn't have even have bothered with today, and then it dawned on me during 2nd or 3rd period, that this is what the 7 period is like."

"Today's an advisement day, and I always feel rushed on those days and it's only 15 minutes shorter, but I always feel like, whew, it's a short class period. It does seem short. I love this schedule. I would hate to go back to the other one."

"A lot of time people ask us to come to their schools and talk about the 4-period day. They had me on a 7 -period day giving presentations all day. I thought I was going to die. Every time the bell rang, people jumped up and ran, and the whole atmosphere of the whole school, it was that whole running type thing. It was a real stressful day for me."

Dramatic change:

"I thought we would be stuck with the 6 or 7 period day forever. . . They were doing the 6 period day when I was in high school. For all I know, my parents had a 6 period day. When they first proposed this, it was like suddenly somebody in the middle of the night, somebody turned their headlights on me and I was startled and shocked and thought, is this possible? I don't mean that this is a cure all. I don't suddenly find incredibly motivated students dying to learn."

Professional development interview data

7 period teachers: preparing for the schedule change:

"As I'm teaching lessons now I'm saying of this chapter that these two lessons would do well together. . .and here are some questions that could be eliminated."

"I think most of us have talked with teachers in other schools to see how has it changed their teaching, how are they feeling about it."

"We started bringing in people we wanted to work with."

One counselor said, "We went to four high schools who are currently on the four period day. . .and we asked questions. . .every time we came back, we sat down. . .but now it's a matter of trying to figure out what ideas might possibly work for us."

"Each department picked somebody. . .to go out to visit schools. . .the committee developed a list of things they wanted these individuals to look at. . .each department tailored things they wanted those individuals to look at. . .These people came back. . .and identified some things that were consistently coming out. The first inservice that we had . .it was decentralized, so the departments got to decide how to spend the time."

"The original design was that we get a grant that would release some people for a portion of the year so each department would be able to pick somebody and say, okay, you're not going to teach this period, this 9 weeks, instead you're going to be a resource person to assist other teachers that hour. You'll be able to go in and cover their class to free them up to work with somebody else during a prep period developing some strategies, some lessons, whatever. What we ended up with was a grant that will cover the released time but it isn't going to be spread out amongst departments, it is one individual from one department for all of it."

Need for more preparation felt by 7 period teachers:

"Originally when we were told about the possible change to a four period day, all we got was the good news. . .you'll have time to get your curriculum together, and you'll have writing time, and we'll pay you to do it, and blah, blah. Well, now, that disappeared. . .the negative part of that change is that people don't think they're going to have the opportunity to get it set up the way it should be."

"A lot of them would like to have four or five days summer work time or something like that to sit down and actually write, hammer out things, what they're going to do and share and all the rest. And they're not going to get that."

Champlin Park's experience with preparation:

"We had a good pot of money to provide ten days of inservice for our staff over the summer. We spent two days of it as a building, looking at things like how our technology, computer systems were going to work, and we brought a couple teachers in from Wasson [Colorado] for half a day to just talk to our teachers and say, it's going to be okay, you'll survive, and 85 minutes with kids isn't the end of the world, don't be afraid of it. And then the other eight days were departments sitting down and saying, yeah, we teach tenth grade lit and comp, we know we're going to have a little less time in lit and comp than we've had before, we need to decide what it is we're going to focus on, what are the most essential things we teach, and how are we going to get there. And they did a lot of restructuring and they continue to do that."

"What we did was meet several times [during the year before opening] as a department to talk about our general philosophies and some approaches and just the basic things that we needed to do to put together a department. . .we were also given hours to write as a group, to meet as a department."

Blaine's experience with preparation:

"There was not a whole lot of breakout time and not a whole lot of inservice. However, we did spend the year leading up to it taking all of our inservice, trying to prepare the

teachers for the change, talking about varying lesson plans, talking about what it would be like to have kids for 85 minutes.."

"The research and development subcommittee's job was to research [the schedule]. We brought in folks from Colorado, did some reading, did teacher surveys, got back to staff, and told them, here are your options." "The original group. . .went to visit some other sites. They were able to ask the questions, they would come back, and we would bounce things off of them."

"We didn't have a whole lot of money. . .Originally, they promised some money, but then it dried up. They were going to give us some money over the summer because I wanted to rewrite some things and look at different ways of doing things, but that ran away."

"There was no formal time to get together and really think about it as a department. I don't think there was time or money. We did meet with Champlin Park. We were also told by people that we were going to have to experience it. How do we really start planning? You have to jump in and try it. What we needed was time to follow it up and evaluate. Once you've jumped in a little bit, okay, let's step back. . .We didn't have the time. I think we did grade level kinds of things. I think everyone was kind of in agreement on areas of curriculum we have to have for priority, and then people were kind of left on their own."

"I would have liked some time to reprioritize what I do in a class time. . .I think we could have used the planning but not for lesson plans as such, but broad outlines. . .We didn't have time at grade level either to sit down with each other. . .it was just diving in and doing it. . .that first semester seems kind of like a blur now when I think back on it. . .you have to rewrite tests, rewrite how you handle homework."

Learning from teaching (Champlin Park and Blaine):

"With everybody coming and taking tours here. . .we have had the opportunity to talk to more. . .teachers in different parts of the state and country in the last two years than in

my whole other 8 years of teaching, and it's been wonderful. . .It's really made me rethink and affirm how I feel about it. . .so sometimes it's just therapy just to talk to other people that are in the same boat or going into the same boat."

"I was on a panel where people had questions about the 4 period day so I was on the other side. You think about the basics as you prepare for something like that. What kind of questions will they ask? What should I present to them? It is kind of fun to answer questions and compare notes."

"That is why I go on these tour groups because I've learned more about the four period day on these tour groups, the background, the philosophy, what the so-called experts have to say, listening to my co-presenters."

Current needs at Blaine:

"I think that's a real need [for help with teaching strategies]. I think we are starting to feel that now, the first year was kind of euphoric. We're into the second year. I feel like I need some other ways. I need some time to sit down and do better planning."

What teachers learned from inservice before they started:

About how to change the classroom:

"Variety. Provide movement. . .Give them a chance to change their position, they can't sit for 85 minutes. . .

"About being flexible and grouping things together. . .[it] didn't help a lot in a concrete way, but we had a little bit of an idea going in. . .We got ideas about pacing and what a day might be like."

"You must have students engaged in some participating activities in this kind of schedule. You can't rely on the lecture, even if you are a great lecturer."

"Call parents right away if there are problems with kids not working,"

"Have a flow chart in mind, where you are going to end up."

About how to approach the schedule change:

"I think that a lot of it was on giving us reassurance that it would work. It is not going to be a disaster. You just have to go out and do it."

"You almost have to dive into it and be flexible. The worse thing you could do is to say that, okay, I've got 9 weeks and I'm going to plan out every day. Forget that."

"We were revising our courses and you have half the amount of time to get things ready and that kills you the first time through."

"Until you get in there and do it, you'll think it's a bigger deal than it is."

From experienced teachers:

"It's like teaching an old dog new tricks. I had to readjust how I gave assignments and how I corrected them. . . We needed to learn some tricks on how to deal with the 85 minute period, and what we can do to reduce paperwork."

"That is the best part of it. . . to have to kind of retool what we do. We had to change or we would die."

"An initial advantage is that you have to relook at what you have been doing for 20 years. You can't just take out the worksheets and the tests that you've been doing forever and just stick them in."

Some teachers felt they had fewer problems switching to a 4 period schedule:

"I had taught junior high for a long time. We already were doing 2-3 things in a period, different activities, whatever was possible, and we were not as used to standing and lecturing."

"English. . . curriculum has so many different strands to it that we were used to balancing those different things in the classroom regardless of grade level. . . I don't think it was as dramatic a change for us."

Suggestions for professional growth from both 4 and 7 period teachers:

Don't use your staff development resources up before you start:

"You can try to prepare all you want. . . but you are really not going to be effective until you experience it, so don't spend all your resources trying to get ready, save some of those resources for the process once you are into it."

Schedule time into the structure:

"Two week periods in August or June, probably August would be far more effective to impact the change of a year, than trying to do a few hours here or a few hours there."

"Staff development during the year would be better than staff development before the year."

"During the first two quarters, I would have appreciated it if we had declared a day to be a half day or a whole focus day and then cut the kids early and just leave us 2 hours."

"If they would give you an extended contract. . . in the summer."

"If we had that week every year. . . We need a week like that. . . we just need to be here and be able to assess what we are doing."

"We could always do more, but I don't want to be out of the classroom to do it." "Money is available for subs, but not available for Saturday mornings, or Thursday after school. . . At least examine the feasibility of doing that on a Saturday and paying people the sub time so that they don't miss school." "Giving us released time to go so we have to get a sub ready. . . that doesn't do anything for me."

Teachers suggest what they need:

"You rewrite things like crazy and maybe within that time you should be able to talk to other people. . .for your own study purposes or to be able to sit down with somebody else and say, how did you take this unit and put it down to this? What did you throw out? How did you edit this film?. . .For my money, I think staff development of that nature as opposed to inspirational speakers. . .would be nice to have."

"Sometimes the days that are set aside for inservices have school and district level focus. . .I can see why they do that, but if we had taken half that time, and. . . those that teach the same thing, pull together and spend an hour doing something, Come up with some kind of statements at the end; we need to be accountable."

"There should be opportunities for grade level within the school, to simply have an hour to meet together several times a year. There should be opportunities for grade level with all four schools represented. There should be some time set aside for just general overview sessions. . .for all social studies of all 4 schools. . . There should be coordination between middle schools and senior highs."

"As far as curriculum development. . .there's a lot of things that need to be revised and redone and revisited, which would alleviate some stress if you have better activities and better vehicles to drive the train."

"For inservice, give us what we need, don't inspire us with a speaker, inspiration is not the problem."

"Really what it is we are saying is let us work at what it is that we know we have to do."

"I wish they would offer more classes and just pick up the cost of it because I don't need more credits. . .They have made a lot of technology classes available through technology people after school. So that has been wonderful."

"Teachers would probably like more [staff development], but they would like it to be exactly what they want it to be. . . We tend to have all-school staff development days, with everybody doing the same thing, and that's probably not fitting everybody. I think what most people feel is that they don't have the time just to work with each other. The best staff development is what we can give each other. . . We feel we have a lot of good minds here and we could just help each other if we ever had the time. I think that's what most people would feel."

"With respect to staff development, it's the day-to-day stuff that is crucial for a new teacher."

"We've decentralized things, allowed things to be tailored to the departmental and even grade level needs and people have a much greater sense of buy-in."

Instruction interview data

7 period schools:

Staff from 7 period schools were concerned about whether teachers will change their teaching strategies or "just double the lecture time or lecture and study."

Some teachers talked about what their current schedule did to their teaching:

"47 minutes is a killer for a writing project of this magnitude {of the research paper}."

"I like to do simulations. They don't work very well with this schedule, but I make do. So it means carrying over to another period. . . Or with class discussions, this time period can oftentimes be too short. Discussions are almost impossible to resurrect the succeeding day, so you shoot for things that you can do in a fairly short period of time."

"We won't have to split a film over 4 days or 3 days. . . a kind of continuity that we may have that we don't have right now. I think discussions can be more timely."

One teacher compared the 7 period to the 6 period schedule, "under the old schedule, I would have time to answer quite a few individual questions going around the room as they started the assignment. Now, I'm lucky if I could get to two or three kids before the bell rings. So they are more forced to work without a teacher available to answer questions."

Some teachers are looking forward to changes that may occur with the 4 period schedule:

"I've become very aware that when a student asks me, 'now, can I do this,' they're not saying 'I didn't pay attention to your directions,' it's really saying, 'I've got 7 different people telling me 7 different things. I need to know which set of rules I'm playing by.' Four people calling the shots will be a lot simpler for kids than 7."

"It puts a premium on teachers developing more active learning strategies, a greater variety of student activities. . . I think that's better teaching. . . We may improve the caliber of the education that's going on. . . There's the potential for new teaching strategies to emerge that will benefit kids."

4-period schools:

The general positive outlook on how the 4 period day affects classroom instruction is represented by the statement: "The four period day has allowed us, for the most part, to be able to teach in a way that we probably wanted for a long period of time."

Variety:

The most often given piece of advice on what to do in the classroom with a 4 period day was to provide variety.

"You cannot lecture for 85 minutes and you can't take two lesson plans and hook them together."

Teachers are encouraged to try new activities. "It forces you to try a lot more things, allow for things you never did before. I did peer teaching for the last 2 years that I had never done before. . .I always thought I was the purveyor of information, now I let the kids be the purveyors of information."

The time should be broken up into smaller pieces. "One thing that's crucial in the 85 minutes, you can't go much more than 12-14 minutes without engaging them somehow and you want to make sure all of them are being engaged." "If you don't do that, it gets to be a very long time for students and a very long day for you."

"I don't think teachers would survive here if they weren't creative. I think they would be eaten alive. The kids for 85 minutes wouldn't stand for it really."

Applying knowledge:

"I like kids to discover materials rather than have me tell them and it's hard to get them to discover in 40 minutes." "Students have time to do self-discovery about the materials they are working on instead of me standing up in front of the class and lecturing and saying I am the authority."

"We do more investigations, can give kids more time to think. You can let them muddle through a problem rather than rushing them to an answer or providing it yourself because you're running out of time, more time to ask kids what if."

"The student gets a chance to apply it. . .they just have to do it for a longer period of time. If I'm applying it, I'm going to understand it better, I'm going to take it with me, and I'll be able to do it wherever."

"We are seeing more group activities, more cooperative activities, more experiences that we can get out of the building. Our ecology class, instead of bringing a sample into the lab, go down to the river and the lakes, and they collect their own samples. . .It is more meaningful to them."

"With the time, you have more discussion with real decision making. You put them in situations and see how they react. Ask them, what do you think? There's more discussion of real things instead of just cramming in the information and remembering it and getting A's on the tests."

"It's easier to do hands on activities if you have fewer classes to prep for. If you have more preps it means you have to stick more closely to the book."

It is "essential to do a lot more active participation kinds of questions. . .you force every student to make an answer. I do a lot more where students write down their answer first so they are on task. . .I think it's very essential to get them focused and refocused and focused and refocused throughout the 85 minutes."

Continuity promotes learning:

"I get a chance to introduce the material, walk through it, do some group work, and then review and bring it together at the end, rather than having to miss the closure because we ran out of time, especially the science or the lab classes." "We used to talk about that Madeline Hunter term [closure] and I was doing closure when they were going out the door."

[We can] set it in their minds before the end of the hour. It's a higher quality learning." "I don't think they learn more. I think they learn what they learn better because they don't have that delayed time."

"For debate it's wonderful because we have time. . .to debate an entire round of debate and then the next day, we can review pieces of the debates."

"You get through the book in fewer days and so students get the big ideas faster by participating differently and we get through the material quicker so they can make those connections."

"We are doing a great job with composition because of the 4 period day, because when they are in a lab, they are on those computers for a more extended time. . .Now, I can actually help people with their writing while things are on the screen so there are a lot more kinds of revision going on, better proofing. We can demand those things because it is possible to do them in the longer period."

"When the kids come in the next day, we don't have to redo everything. We can start where we left off."

"We don't chop things up. . .I'm having a mock trial. . .It's really fun but under the old schedule, if a group was on a roll and really flowing and really just "on" and. . .oops, we [have to] stop, and then somebody'd be gone or something would happen and the spark wouldn't ignite on the next day. . .I also do a mock senate hearing that I used to have to divide up. . .so I can do that in one period. . .So you don't have to reassemble, rearrange your room. You can do it all in one shot."

"When we are discussing a novel, the continuity of that discussion because it is not going over 2 days [is greater]. . .[it] comes together better, gives us a chance to get a point across. . .in a little different way just because we have the time."

In-depth study facilitated:

"The students know that you have more time. I think they are much more likely to get into topics, issues, that they probably would feel they couldn't bring up for lack of time. . .[there is] greater depth of the topics. . .Teachers maybe don't quite as often rush them in the discussion."

"I think there is a tendency to stretch out the discussions, stretch out the units. . .We can do so much more in an 85 minute [class], so let's draw a map or let's pretend, you do have more creative possibilities. . .you do things that you didn't do in the 45 minute or 47 minute period."

"I really feel since I've been here that this is the first time that I've really taught music . . . instead of just rehearsing for a concert. I feel like I'm teaching about music. . . We take time to learn about the man, to learn about the historical time and context of the pieces, instead of just learning this one song. It was such a richer experience for the kids, and they were actually smiling that we are actually playing Mozart."

Group work really works:

One teacher summed up what many said about group work, "With cooperative learning types of activities, it is impossible to do them in 40-45-50 minutes, set them up, carry them out, and . . . debrief. [If you] try to start and stop over a 2 day period, you lose all the momentum. You have different people working, some that were the previous day are gone, and some that weren't there are now back. . . You can do it within a single chunk of time. It allows for cooperative learning and group activities to be legitimately successful with the 4 period day. So many teachers are saying, cooperative learning doesn't work. No, not in 50 minutes, it doesn't. Yes, in 85 minutes, it does."

Many teachers made comments such as this: "I spend at least 50% of every class period on group work and I never used to use it much. I use a lot of it now, and it works, and [the students] do get something done."

Changes in use of audio-video:

"[Changing from a 6 period to a 4 period schedule] alters the nature of machine usage, video, because you . . . use it for 10 minutes and then we'll do another activity and come back for another 5 minutes. You [have to] edit. You end up showing 20 minutes of Gandhi. We used to show maybe an hour. It takes a lot of time to work that out and get it to make sense and fit within the time frame."

Lab work works:

"For the lab course, [science], it's very nice. . . you have the time to do it. You have time to go in-depth, you have time to have students write up the labs and clean it up."

"In theater workshop, they do projects, actually work with materials. If the time were cut in half, just to get them started with tools would take half the class and we never would get anything done."

"In our department [industrial tech]. . . you can teach a concept, the students can try the concept, have some conclusion to the project, and then you can give feedback, all in one class period. It seems to me that the retention of those students is better because they have it taught to them, they can work it, they can get feedback."

"It's much better for them and so much better for us [home ec] in a lab situation, because you're not always cracking a whip on cleanup. You pop all the stuff out, rush through it, and start cracking the whip on cleanup, and then you're done."

The computer lab works more effectively:

Comments are characterized by: "Without the 4 period day, the students would not be able to utilize that technology as effectively. . . 30 minutes one day, 30 minutes another day vs. 85 minutes straight another day. There's no comparison." I "love the computer labs. . . you have time to teach them how to use, have them type it up, have them turn it in, they can actually get a paper done in 85 minutes."

Amount of paperwork:

"Stuff comes at you faster. It's not that it's less of a paper load, but somehow, reading three sets of papers, even though they are more often, seems somehow less exhausting than reading 5 sets. It just does."

"You only have to deal with 90 kids at a crack so you can take more time to correct things. You can make more comments. You can intercept more misinformation and correct them before it's ingrained and the kids have to unlearn it and relearn it."

"The upsides are the correcting that you do. . . I am much more willing to do that. . . because I don't have so many and I don't feel quite as burdened by that as I used to. .

.There are 5 essays on this next test and it's going to be a lot of reading to do. It's hard, and I think I would cut back if I have 150 students, 160 students. So that's a major plus."

Meeting individual student needs is easier:

Several staff commented, "Students who aren't lecture type learners are allowed to participate and gain an understanding of the subject." Teachers say, "You can't tie yourself into one learning style/teaching style with a longer period and this means you meet more kids' needs for different learning styles."

More help can be directed to "a student who has problems. . .I can go through the stages of the class and have time when the others are in independent study. I can have time to help those students who don't get it." "I can get around and make sure that kids are understanding. They can ask questions. . .You have the time to explain things to more groups and more students. . .there is more understanding."

Retention interview data

One foreign language teacher told about seeing the results of the performance [tests] of their students compared to one of their sister schools. "And the other department chair and I just looked one another in the eye, and they were exactly the same. That was affirming. I knew it and I could see it, but it helps if it's on a piece of paper and you can prove it to someone."

Foreign language see little difference with students who have a gap of 3 months or a gap of 6 months because "you have to review the same materials." They say it is not different from under the 6 period day if someone skipped a year.

They acknowledge that "sometimes the kids are scared if it had been 9 months or a year, but after 2 weeks, it came back. It's long term memory. If you set the tone in your class that it will come back, it will be fine. Usually it doesn't even take two weeks; you have to reassure them." This was supported by another teacher who said, "Kids who

are experiencing the most trauma three weeks later are the kids who when you look at the records, failed the class the first time. So they didn't know it in the first place."

The real issue is not what they can do "at the beginning of the next level, the entry point, but what they are able to do at the exit point. And then it doesn't matter if it's the weekend before or a year before."

In general, teachers from other subject areas had similar views about retention. One said, "I think learning is a function of how much practice you had at the beginning, and you get more practice this way and so you remember it and you retain it better, and it doesn't go away. . .you've practiced until it's going to become an ingrained pattern and then it will come back."

Opportunities for students interview data

Champlin Park reported that in 1994-95, 90% of students chose to take 8 full year equivalent classes out of 8 possible. Blaine reported going from 50% of kids taking a study hall their first term down to 16% in 1994-95. Their numbers have followed Champlin Park's. They are one year behind. Some comments about students choosing study hall include:

In the 7 period schools, one teacher's comments captured a feeling that there may be many more students "sitting in study halls [than shown in registrations] who have tried the seven periods and found out it's too hectic for them, and they don't want it."

A teacher in a 4 period school feels "they don't want to be in study halls. They are choosing to do more homework. . .They are expanding academic and study time."

4 period staff suggest there are more choices and flexibility for students:

Bolsters and stabilizes elective areas, enabling exploration, surveying, and just taking courses for the fun or it.

Eliminates the design flaw in the 6 period day which guaranteed conflict for every student that was in music.

Allows students to take courses they never even thought about taking. "Kids are not just wanting to get out of here."

Allows counselors more creativity with a student's schedule.

Results in more needs being met than with the 6 period day.

Allows athletes, for example, to ease up on those quarters when they know they are going to be practicing.

Brings variety to each term. "It's not a lock-in thing from September to June. . .allows them to be fresher throughout the whole experience in the school year."

Staff say top achieving students benefit in the 4 period schedule by:

Moving quickly through a lot of advanced classes.

Taking the opportunity to learn more than one language at a competent level.

Being ready for post-secondary classes sooner (if courses are not added in math and science areas).

Staff say low achieving students benefit from increased flexibility by:

Finding more classes students will really like, hold their interest, keep them in the system, and give them the skills they will need.

Letting them start over at the quarter or semester if they have blown it instead of wasting a whole semester or year.

Being easier to take the pressure off and let them drop out for 9 weeks than for 18 weeks. It's easier for them to come back, too.

Curriculum interview data

The biggest criticism of the 4 period day is from those teachers who are frustrated that they cannot cover the material that they covered in the previous schedule. Many staff feel that this is, in fact, "a real big issue that needs to be dealt with" more so than any other issue raised in the four high schools.

Loss of Time and Curriculum:

By strictly counting minutes, there was a loss of nearly 15% of time when moving from the 6 period to the 7 period schedule and nearly 10% when moving from the 7 period to the 4 period or 23% for those who changed from the 6 period to the 4 period schedule. Some make the argument that not all the time was actually lost because there is a gain through less administrative work in keeping attendance records and in starting up and winding down. Others go even further in saying that the time loss is made up for because there is less time needed for review from the day before because there are fewer days and because students retain more of what they learned.

Most teachers are not convinced. They have had to "sacrifice" parts of their curriculum and are not able to "cover" as much. Additionally, most teachers spend more time going into depth with what they do cover and are using more time-intensive hands-on and application activities.

There was some speculation that in courses where "there's a lot of laboratory work, set up and tear down, they may actually come out the same or ahead." Discussions with industrial tech, home ec, and science departments confirm that these departments do find the longer period a dramatic improvement in being able to do the kinds of activities they find effective in their subjects.

Potential Harm:

Staff, particularly in 7 period schools, but also in 4 period schools, are concerned about whether they "are going to be hearing reports 5 years from now that [students] are not ready for things in college."

One teacher thought it important to "look at the international school systems, like Germany. . . We are going backward in minutes and hours in school and if the kids are going to compete globally, is that sensible?" "European countries spend an incredibly greater amount of time on the core liberal arts curriculum."

Academic Core vs. Electives:

Some feel the "school has gone very lopsided towards electives." Under the 6 period schedule, there were a possible 24 credits; now there are 32 possible. (The numbers that follow may not be exactly correct, but the point is the balance of required and elective courses.) The number of credits required to graduate has increased to 26, but the required courses have remained at 13 1/2 credits. Electives formerly were less than half of a student's program; now they are half of courses needed to graduate and an even larger percentage of the possible 32 credits.

Some teachers recommend an increase in required credits for the four core subjects. They propose an increase of one credit each for English and social studies and one-half to one credit for each of math and science. They point out that most of the additional possible credits would still go to electives.

Many staff call for a discussion about what the priorities ought to be. Not all are in agreement that more should be required in the four core subjects. While it is the case that students are spending less time on each course, it is clear that they are spending more time in classes rather than in study halls and, perhaps, they are spending more time on some of the core subjects by taking electives in the core areas.

Effect of the Grad Rule:

Anoka-Hennepin school district has been a pilot site for development of portions of the new graduation rule. How a new graduation rule will affect high school curriculum is still being explored. One teacher speculated that the change in state department graduation requirements "may or may not really necessitate the kinds of courses that we have now." Some teachers feel that their 4 period schedule curriculum concerns have not been addressed because " a lot of people are holding off because of [the grad rule]."

One example of how curriculum might change traditional views of departmentalization was given by an English teacher. "My hope. . .is that other curriculum areas, the elective programs, also teach English skills if we are talking about the grad rule. So they have to teach interpersonal communication, they would have to teach writing and evaluate writing and assume that it's not just up to the English teacher. . .Perhaps in a business program, they'll do speech activities so that the English program is utilized in their classrooms."

Topics, Themes, Concepts, or Chronology:

The loss of curriculum is particularly frustrating for courses categorized

as chronological, such as, literature or history, but particularly American History. One teacher distinguished courses that are "by nature more process, the other [history] is by nature more content." She added, "You can't compress every course the same from a year to a half year. . .And I can speak from when I teach psychology, I love the 4 period day, and when I teach American History, I am exhausted. I feel like I have shortchanged the kids. . .I was aghast at the things I skipped because of the time."

Some American History teachers say that the district curriculum "is to cover the whole world. . .and you don't get to it if you are content oriented. . .a thematic person can look at it and say, 'themes, I can get through it in themes.' These teachers see the American

History debate as a "microcosm of what has been going on generally in teaching. There are people who are process oriented and there are people who are content oriented."

Some math teachers felt that they could cover the same topics if the textbooks were written correctly, and if they had the time to adjust their scope and sequence.

One world history teacher said that one year for the "rest of the world for time immemorial. . .leaves a pretty big stack of stuff we're supposed to do and it's pretty impossible to do it." Even if the world history course is organized around concepts, "There are too many thought questions coming in the same class. . .we should do maybe one, maybe two of those concepts in a class period. . .I have to pitch a lot of things out."

Teachers from several approaches lamented having to give up "more relaxed activities that will tie some things together, that are fun." "We are throwing out things that used to be used as interest. . .they can get through life without Becket, for medieval history. . .but he raises some good issues." "I could pick and choose and have some additives [in home economics], where now, I strictly teach exactly the curriculum."

What Should be Taught?

The question of what should be taught has several sub-questions:

1. Are we teaching the content the state university, the colleges, and the college entrance standardized tests require?

A 7 period teacher asked, "Who says that what we were doing in the first place is what we should [be doing]. That's never been studied. . .and compared with ACT exams, with college entrance, and with expectations of college professors and so on."

2. If 4 period teachers say they are improving education with the 4 period day, what are they talking about?

"What it means is that you ought to be moving toward those decision making skills and performance and the ability to comprehend, compare, contrast, apply, evaluate, build. That's what we ought to be about."

"If I don't get to the content, I'm not concerned about that. What I am concerned about is their ability to think, reason, process information, and use that research in a meaningful way. . .I think I am far more successful in regard to those real life skills that kids need."

"What I see in the future is our job is not teaching the information, it's how to use it, what to do with it. And regardless of the discipline, there's going to be a fourfold increase in information, so you are going to be even more frustrated."

3. Some 4 period teachers say they focus on what's essential:

"What a lot of staff have done is to step back and say. . .How many short stories does it take to teach the essentials of a short story and they decided three. . . We've got all of this that we've added and added and added to. What's important, and what's essential? And that's what a lot of the effective schools research talks about is teaching kids what's essential, and that less is more."

"We can't possibly read all the great books that there are anyway. So if it's 9 or 7, it's still only a smattering, so what the heck."

"They no longer teach from A to Z. They've had to decide what pieces of the puzzle are really the key components. . .[they say] I don't cover as much any more, but what I cover, I cover well, and that's what we're here for."

"You really have to make a change from content, not worrying about covering the content. Maybe focusing more on what's essential in your curriculum and paring it down to what's essential and spending the time on that. I've found I can get through the important things I need to in our district curriculum in a four period day much easier than I could have when I taught in a six period day. Assessing kids differently, having kids demonstrate what they know in other ways than tests would save a lot of time."

"You can't cover everything anyway and covering a smaller amount more thoroughly and learning it better is just as appropriate as covering it all and having less retention."

An Extra Term or Not?

Some teachers in subjects such as biology, American History, and some math areas, are proposing that their courses be 3 quarters long instead of two. In Anoka-Hennepin, some Advanced Placement courses have already been expanded to 3 quarters.

There are those who caution that using extra terms "defeats having a full year course in one semester, because now those kids aren't going to have more time for electives if they have to lock up another year's course to finish 2 courses that they should have been able to complete."

An administrator suggested that first "you need to look at what you are teaching and ask yourself if it is important to show this movie, to do this activity, to get this point across. Maybe you don't have the luxury of doing that anymore. . . some teachers are not willing to let go of the curriculum."

A counselor said, "I know what it's like to give up lessons that you have taught for years that are very successful. . .It's almost like parting with a child, so I can understand that frustration. . .On the other side, I see kids taking more and more. . . academic subjects, choosing to take another level of science or more math."

So what should the district do?

"We would like to revisit what our curriculum is because we would like to make it adapt to our schedule?"

"We've got to look at that district curriculum and pull out some of the stuff. I mean it is just overwhelming when you look at what we are supposed to teach." (English teacher)

"When we wrote curriculum, we wrote it from the context of our experience as a 6 period day. Now as we go through curriculum revision, and there are more of us 4 period day, I think that curriculum is going to change a little bit. . . whether we cover the district curriculum or not will become a moot point. . .because we will have written it."

The students "run out of classes. . .we're not getting any cooperation from our district in allowing us to offer more classes."

"There has been very little coordination since the restructuring. . .there is a conflict in philosophy. . .all 4 schools have to offer the exact same things. . .By definition, those who have the 8 periods. . .are going to need more electives than the other schools. . .I do not see evidence that this has been thought through and articulated in a way that we know about. And I do know that we have gotten at least 4-5 messages about whether extra elective courses are welcomed."

Homework interview data

Some teachers' comments related to their frustration about the amount of material they can cover on the 4 period schedule. What they would like to have the kids do "is to make up some of the time differential as homework and [students] don't do that." "If you could spend the class time just expanding on what they've already worked on instead of spending your time doing what they didn't do, I think it would work beautifully."

One teacher said, "One of the flaws is that we are supposed to be able to give homework more than we did before because you only have 3-4 courses rather than 5 or 6, but the fact of the matter is that kids just don't do significantly more homework in this system than they did in the old system, maybe a little less."

Another teacher felt more positive about the result. "I do assign more for each day. . .because I don't have as many days. . .It's not double, but it is maybe 30%. . .50% more maybe. . .I don't think the level of getting the work done is any better or any worse than it was before. You still have them that do and those that don't."

A dean said her view was "that teachers have to assign more homework. . . And I think a lot of teachers would say it won't get done. It'll be too frustrating and if you make that contingent on what you do the next day, then everything will fall apart because too many kids haven't done it. I understand that and I don't know how we go about changing it."

One teacher voiced a view held by many 7 period staff that one reason there is a loss of instruction time in the 4 period day is that he "suspects that part of the time is spent more in study hall than they'd be willing to admit."

A 4 period teacher replied to that. "We don't have time to do homework in class, maybe to let them get started. . . We're doing something as a group or practice, but not homework." Another comment represents those teachers who feel it's positive to give students more time in class to get started on homework so that "by the time they get home. . . they remember better that they had something to do and the work seems to be better."

Student achievement interview data

Concerns about student achievement:

For many staff the bottom line for schools is academic achievement. Some 7 period staff worry that the focus of the 4 period day has been on how people feel, the affective over the cognitive. Said one administrator, "I would be pretty sad if the data shows that the touchy feely. . . won out over the academic stuff because I think that's really what we're here for."

Staff in 4 and 7 period schools worry about the "preparedness of the kids that are going on to post high school programs." "Looking at the national tests. . . traditionally we have been very high. Will it be maintained?"

Several 7 period staff questioned whether this was just another innovation for innovation's sake. They questioned whether there "had been enough time to study how

it really operates in the places that are on it." One "would like to see schools for a change have some research to back up a program before they go leaping in."

How should student achievement be measured?

There is no agreement in the district on how best to measure student achievement. Some focus on standardized tests, such as ACT's or Iowa's, and said if "test scores are going up, that would be of significant value to us."

One 7 period teacher suggested a combination of outside standardized and district measures, "I think Iowa scores of those kids in a particular class and then the CRT's. Maybe that combination of things might measure what we're doing."

Another 7 period teacher suggested, "Rather than district information. . .far better would be a state assessment."

Many 4 and 7 period teachers wanted to be sure the tests measure what is really important. "Really what we're after is the ability to. . .demonstrate that higher level activity. . . Come up with something to measure the higher level expectations with regard to synthesis, evaluation, etc."

One 7 period teacher said, "I'm real worried that we are just doing the standardized scores. . .I would like to see people analyze real daily work. . .what percentage are basic facts, but totally losing it for application and evaluation."

Are students doing better academically in the 4 period day?

Most 4 period staff feel that students overall are doing better than they did under previous schedules though they may not have data to support their feelings. Example comments are:

"I think there is a general feeling among teachers that this is a better system. I'm not sure we know if there is empirical data."

"I don't hear kids being as negative about academics as what I've heard before. . .saying. . .this class is dumb."

"I've heard scores of kids say that they were getting better grades. . .I hear very few saying the opposite."

"The number of failures have been reduced."

"I'm seeing more A's and F's. I've got more success. I've got higher grades and lower. C's have virtually disappeared from my grade book."

Why are students achieving more?

There are a variety of reasons given about why staff feel that student achievement is better under the 4 period day, such as:

"They get to know their teachers."

"They do have time in class to get started on assignments."

"Because you spent enough time for it to really sink in."

"There is a difference in the way students are receiving instruction and there is a difference in performance."

"It's the enthusiasm of the teachers; it's the esprit de corps of the kids; they're realizing that this is the opportunity to perform so they [have to] do it."

"They are focusing on 4 at a time, so the success rate is higher."

"The variety of techniques allows for more students to participate at a high level."

"They have 4 staff members and 4 sets of criteria they are managing. . . clearly their life is organized." (seven period teacher)

"When you are only preparing for 3 or 4 classes, you're more likely to do your homework. . .they are doing their work."

"The kids learn it better because it isn't so broken up."

Interview data related to parents

Teachers in 4 period schools speak positively of parent conferences. One teacher remembered a parent-teacher conference in a 6 period school and said "parents came and talked to me about their kid and I had no idea who their child was, absolutely no idea." In contrast, now "if there's a kid in my classes that I'm not sure what hour they are or where they sit and which hand they use to pick their nose, I'd be real surprised. Don't quote me on the last one."

An administrator reported that "the very first year that we were open, the thing that the parents realized at the parent conferences was that the kids were known by the teachers. . .The first one was twice as fast as anybody thought that we would even be prepared. . .teachers knew the kids and parents were saying that this never happened before."

Teachers have also heard from parents, "My kids have never been as successful as they've been here." "My kid never liked coming to school before." Their children have told them they "understand things more because it's not so much start and stop and start and stop." We "cover it better." "You really know my son or daughter much better."

Teachers also "have more time to call parents during prep and a fewer number to stay in touch with."

Changes in jobs of counselors/deans/assistant principals interview data

Counselors, deans, and assistant principals identify several ways that the 4 period schedule changes their jobs.

1. The way to gain access to students will change. Schools typically contact all students at a grade level through their English or social studies classes because all students are in these classes all year in a 7 period day. Champlin Park uses Advisory period and Blaine uses Focus period, each occurring once a week for 1 hour, for access to groups of students. More careful advanced planning is needed if guidance curriculum is implemented. Social studies and English teachers are delighted that they are no longer the target of class interruptions for these purposes.

2. 4 period schools report that access to individual students is easier. One dean said, "I don't feel guilty about calling kids out of class. . . I take a small percentage of the student-teacher contact on that particular day." Another said, "It's easier. . . you have time to send out a runner and they have time to come." During the 10 minute passing time they can come and sign up or actually see the counselor and still get to class on time. The teacher has more latitude to choose the best part of the period to send the student.

3. In one way, there is more work because students are not changing schedules twice a year, but four times a year. Counselors/deans must assess what credits students have earned four times rather than twice.

4. Checking on an individual students involves contacting 4 teachers rather than 6 or 7.

5. There is less administrative detail and more time to deal with individual student problems. There is less administrative detail because attendance is taken 4 times a day and so skipping classes is greatly reduced. The stress level of students and teachers is reduced so, in the words of one dean, "You have reduced friction which leads to fewer referrals to the office. That is obvious, you can feel it, you can see it, and we counted it. There were less fights, less vandalism. We spend more time on career planning than what we did before. . . more working through a problem instead of just throwing a band-aid on it and kicking them out and bringing the next one in."

Student schedule change issue interview data

Champlin Park and Blaine have handled the issue of whether students will be allowed to change classes once they have registered. Champlin Park's view is that a student's registration is to be taken seriously and they will not be allowed to change classes. They feel that staffing is determined by spring registrations and if students are allowed changes during the following year, particularly to retake failed required courses, core subject teachers will have higher class sizes and elective teachers will lose students. Retakes must be registered for the following spring.

Blaine allowed retakes during the same year in their first two years on the 4 period schedule. Some of the deans were concerned about guidelines adopted in spring 1995 which would limit their flexibility.

Graduation requirements interview data

Though graduation requirements had been adjusted, there was still frustration in May 1995 during the transition. Teachers reported "seniors walking around the building with all the credits they need to graduate and there is no incentive for them to stay here." "They just have one or two thing to complete and they just simply didn't care. . . They don't need the credit."

Teachers recognize that "it was an anomaly of one year" but some were still worried that the new requirements would still allow an "incredible amount of failure."