BLOCK SCHEDULING PROGRAM EVALUATION: YEAR 1

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1.0 INTRODUCTION

1.1 Background of the Study

The Clark County School District (District) commissioned the UNLV Center for Evaluation and Assessment and Delphi Research of Nevada, Inc. (Evaluators), to study the impact of the implementation of 8 A/B Model Block Scheduling on student achievement in eight District high schools during the 2005-2006 school year. The District also formed a Block Scheduling Evaluation Planning Committee (BSEPC) to guide the study process and to provide a mechanism for liaison and communication between the Evaluators and the District. The BSEPC met monthly during the course of the implementation year.

By mutual agreement between the District and the Evaluators, the study was designed to include examination of the intervening variables of student attitudes and perceptions, District-level professional development opportunities offered in support of the implementation process, and teacher beliefs, attitudes, and instructional practices. The findings of previous research indicate that these intervening variables play a key role in the nature of the impact that the implementation of block scheduling has on student achievement outcomes.

1.2 Block Scheduling Across the Nation

As the accountability bar rises, schools continue to explore avenues for increasing student achievement, and school leaders have examined new teaching methods, emerging technologies, and alternate scheduling patterns to improve the teaching and learning process. The National Education Commission on Time and Learning (1994) described the traditional 6-hour schedule as the "unacknowledged design flaw in American education" (p. 2). Block scheduling emerged as a way to modify the traditional 6-hour day for high school students (Zepeda and Mayers, 2006).

Nationally, an increasing number of secondary schools are implementing some form of block scheduling to change the ways that teachers work and students learn. These schools apparently anticipate that by changing the way time is allocated – which Goodlad (1984) says is "virtually the most important resource" available to them - they will be able to:

- "include more 'hard subjects' in the curriculum,
- increase graduation requirements,
- implement more rigorous standards,
- reorganize the day through alternate schedules, and
- promote smaller learning communities" (Zepeda and Mayer, 2006).

These schools apparently also anticipate that block scheduling will enable them to:

- reduce the number of students for whom teachers must prepare and with whom they must meet daily;
- reduce the number of classes for which students must prepare on any given day;
- reduce the fragmentation produced by traditional schedules;
- provide teachers with blocks of time "that allow and encourage the use of active teaching strategies and greater student involvement"; and
- allow students with different learning needs and learning styles with "variable amounts of time for learning" without lowering standards (Zepeda and Mayer, 2006).

1.3 Block Scheduling in the Clark County School District

Prior to the 2005-2006 school year, some form of block scheduling had been implemented in several CCSD secondary schools. Then, in Spring 2005, the District decided to expand block scheduling to more high schools during the 2005-2006 year by implementing 8 A/B Model Block Scheduling in eight additional schools. An information and implementation guide was prepared by the District's Exploratory Block Scheduling Committee and approved by the Cabinet in May 2005 for use by these eight high schools. A revised version of this original guide, approved by Cabinet in May 2006, serves as the reference point for this report (*8 A/B Model Block Scheduling: Guidelines, Practices and Information*, Instruction Unit/Clark County School District, May 2006).

The District guide states that the "call for improved student achievement, higher graduation rates and accountability to meet state academic standards . . . requires a thoughtful reallocation of the currently available resources in order to make improvements in instruction. Rearranging time is one method available to stretch current resources to greater use" (p. 2). The implementation of longer blocks of instructional time creates "a more flexible and productive classroom environment . . . more opportunities for using varied and interactive teaching methods . . . more effective use of school time, increased number of course offerings, reduced numbers of students with whom teachers have daily contact, and the ability of teachers to use more process-oriented strategies."

2.0 DOCUMENTATION OF THE PROGRAM

Any study of the implementation of a new or innovative program must include a systematic and detailed documentation of the program as it is actually implemented in the intended site or sites. In practice, the "program as implemented" may vary from the "program as intended" because of the nature and impact of local factors (e.g., prior organizational structures, procedures, personnel, belief systems, etc.) on the implementation process. When the "program as implemented" is systematically documented, and when examination of key intervening variables is included in the study design, it becomes possible to attribute study outcomes to program effects.

2.1 Schools in the Study

The study was conducted in eight high schools designated by the District as implementing 8 A/B Model Block Scheduling in the 2005-2006 school year.

2.2 Common Elements Across Schools

The *program as implemented* was intended to consist of two key elements:

1. the **actual scheduling model** *implemented in common* across the schools, and
2. the District-level **professional development activities** *offered in common* for teachers and administrators from these schools to support their implementation efforts.

2.2.1 Element 1: The Actual Scheduling Model

All eight schools implemented the 8 A/B Model Block Schedule as outlined in the guide. This "rotating week schedule involves students attending eight classes per semester," with school days divided into "four 85-minute periods on A days and four different 85-minute periods on B days. The weeks alternate between even and odd numbers of respective lettered days (see Table 1). **All eight high schools implemented these fundamental components of this block scheduling model, and these components constituted the program baseline.**

Table 1

MODEL 85 MINUTE 8 A/B BLOCK		
Block 1 and 2		7:50 – 9:15
Block 3 and 4		9:20 – 10:45
Block 5 and 6	A Lunch	10:45 – 11:15
	A Class	11:20 – 12:45
	B Class	10:50 – 12:15
	B Lunch	12:15 – 12:45
Block 7 and 8		12:50 – 2:15

2.2.2 Element 2: The Professional Development Activities

Following the decision to expand Block Scheduling to eight additional high schools, the Curriculum and Professional Development Division (CPD) offered a series of professional development activities to teachers and administrators from these schools. These activities, which were designed to support implementation of the 8 A/B Model Block Schedule, covered administrative, scheduling, curriculum, and instructional issues. Sessions were offered on these dates and topics:

- **April 18, 2005**: Principals and assistant principals (with curriculum or scheduling responsibilities) were invited to attend a session on Block Scheduling for Administrators led by principals of three schools already implementing some form of block scheduling.

- **April 26, 2005**: A workshop was offered for Department Chairpersons.
- **April 28, 2005**: Administrators responsible for creating the master schedule in schools new to block scheduling were invited to attend a working session on Best Practices for Transitioning to the Block.
- **May 27, 2005**: As part of the final District-wide professional development day for the year, CPD offered workshops for teachers on Introduction to Effective Strategies for Teaching in the Block. Principals were invited to send Mathematics, Science, English, Social Studies, Foreign Language, and Special Education teachers to attend working sessions led by curriculum coordinators and experienced block teachers.
- **October 10, 2005**: Principals and curriculum assistant principals were invited to attend an information sharing and discussion session covering such topics as providing training and/or other support to teachers for implementing block scheduling.
- **October 31, 2005**: As part of a district-wide professional development day, CPD offered sessions for teachers from schools new to block scheduling. The sessions were divided by content area and offered at five school locations:
    - Clark High School: Social Studies (94 teachers attended)
    - Spring Valley High School: Science (121 teachers attended)
    - Western High School: Foreign Language (27 teachers attended)
    - Arbor View High School: English (136 teachers attended)
    - Mojave High School: Math (124 teachers attended)
- **November 21, 2005**: A follow-up meeting to the October 10th meeting was held for principals and curriculum assistant principals. The meeting agenda included feedback on the October 31st Staff Development Day training sessions for teachers.
- **February 1 through June 15, 2006**: CPD offered a series of live "online, web cast sessions designed to provide secondary school teachers with practical instructional strategies for application in classrooms." The course, which was titled *Strategies for Teaching and Learning in the Secondary Classroom*, consisted of eight (8) keynote sessions of 1.5 hours each presented by nationally recognized experts. The topics for the keynote sessions, with follow-up sessions to the keynote sessions offered by subject (e.g., Secondary Teaching Strategies: English Language Arts) for each session, were:
    - *Differentiated Instruction* (Feb. 1);
    - *Classroom Management and Organizational Strategies* (Feb 22);
    - *Assessment Strategies Related to Instructional Practices* (March 1);
    - *Technology As An Instructional Tool in the Secondary Classroom* (March 29);
    - *Project-Based Instruction* (April 19);
    - *Work Stations in the Secondary Classroom* (April 26);
    - *Cooperative Learning – Grouping Strategies* (5/10);
    - *Higher Order Thinking and Questioning Strategies* (6/15).
- **February 2, 2006**: Dr. Michael Rettig, a national expert on scheduling, presented a session for administrators, counseling department chairs, and academic department chairs.

- **February 15, 16, and 17, 2006**: Dr. Michael Rettig presented a series of sessions on various aspects of block scheduling for administrators in the eight schools new to block scheduling, plus administrators from schools that will be implementing block scheduling for the first time during the 2006-2007 school year.
- **March 2, 2006**: Dr. Michael Rettig presented a session similar to the session he presented on February 2nd.

Though not all site administrators participated in all – or any - of the available sessions, and not all core subject teachers participated in all – or any – of the available sessions, nonetheless, this array of district-wide professional development offerings constituted **the common implementation core for this program element**.

2.3 Variations in the Programs of Schools

From discussions at Block Scheduling Program Evaluation Committee meetings, the Committee realized that many, perhaps all, of the schools were implementing the 8 A/B Model with some differences in one or more program elements. That is, the *program as it was being implemented in individual schools* apparently varied from the program baseline in many, if not all, schools. To address this issue, the Committee agreed that it would be necessary to document possible unique, site-specific features of each school's implementation of these program elements.

2.4 Principal Perceptions of their Programs

2.4.1 Method: Data Collection and Analysis

To document site-specific implementation differences systematically, the Evaluators interviewed the principal of each school using a structured *Principal Interview Protocol* (*PIP*) designed specifically for that purpose (see Appendix A). The Committee recommended that the *PIP* include a few, focused questions, that the interviews last no longer than forty-five minutes, and that the principal be encouraged to invite the curriculum assistant principal to participate in the interview.

The *PIP* was structured to elicit information from principals about:

1. prior administrator experience with block scheduling;
2. site-specific features of the *model as implemented* at a given school; and
3. site-specific *professional development opportunities* provided at a given school.

The interviews were conducted between April 4th and April 19th (2006). The tapes were transcribed by a professional transcriber, and the interview transcripts and field notes (data) were analyzed by the Evaluators. Three stages of analysis were conducted:

- The first-stage analysis was conducted to determine the nature and extent of prior site administrator experience with some form of block scheduling.
- The second-stage analysis was conducted to develop broad analytic categories for the implementation data. This analysis produced three categories:

- site-specific program implementation features;
- site-specific professional development offerings; and
- unsolicited administrator opinions about some aspect of block scheduling.

- The third-stage analysis was conducted to develop analytic sub-categories for each broad category produced by the second-stage analysis (see Table 2).

2.4.2 Analysis of Principal Perceptions

2.4.2.1 Second-Stage Analysis: Categories of Findings

Key: Site-Specific Program Implementation Features

The evaluators identified site-specific variations in four broad aspects or categories of program implementation (see Table 2):

1. Doubling Up (courses);
2. Credit Retrieval;
3. Electives (courses); and
4. Teaming (of teachers).

DU=Doubling Up: The basic form of Doubling Up involved adding a second section of a course on the alternate day so that the course met every day rather than every other day. Schools also practiced two other forms of Doubling Up.

- **DU1**: Adding a supplemental course session on the alternate day (e.g., for remedial purposes or extra help purposes).
- **DU2**: Making it possible for students who fail, say, a first semester course - e.g., English - to take the failed course the second semester on the alternate day while also taking the second semester course on the regularly scheduled day.

CR=Credit Retrieval: Using the time options provided by this scheduling model to offer special opportunities for credit-deficient students to retrieve credits.
E=Electives: Using the time options provided by this scheduling model to offer special opportunities for students to take elective courses, typically along with a greater variety of purpose-designed courses.
T=Teaming: Using the time options provided by this scheduling model to develop some form of teacher teaming, either for planning or teaching purposes.

Key: Site-Specific Professional Development Opportunities

The evaluators identified site-specific variations in two broad aspects or categories of professional development offerings:

1. Outside Consultant, and
2. Teacher Workshops (see Table 2).

OC=Outside Consultant: Bringing an outside consultant to the school to provide professional development for staff.
TW=Teacher Workshops: Using the expertise of teachers at the site to offer professional development workshops for teacher colleagues.

Key: Unsolicited Administrator Opinions

The evaluators identified site-specific variations in four categories of administrator opinions: Block Scheduling Impact; Teacher Attitudes; Student Impact; and Administrator Support (see Table 2).

BSI=Block Scheduling Impact: Opinions about the impact of this block scheduling model on either teachers or students.
TA=Teacher Attitudes: Opinions about teacher attitudes toward this block model.
SI=Student Impact: Opinions about the impact of this block model on students' attitudes or achievement.
AS=Administrator Support: Expressions of support for this block scheduling model.

Table 2 presents the three analytic categories and the respective analytic sub-categories.

Table 2: Analytic Categories and Sub-Categories

SITE-SPECIFIC IMPLEMENTATION FEATURES				SITE-SPECIFIC PROFESSIONAL DEVELOPMENT OPPORTUNITIES		ADMINISTRATOR OPINIONS			
Doubling Up	**Credit Retrieval**	**Electives**	**Teaming**	**Outside Consultant**	**Teacher Workshop**	**Block Scheduling Impact**	**Teacher Attitudes**	**Student Impact**	**Administrator Support**

2.4.3 Findings: Principal Perceptions

2.4.3.1 First-Stage Analysis

The results of this analysis are presented in Table 3: P = Principal; AP = Assistant Principal; Mod Block = Modified Block Schedule; Magnet Block = Modified Block associated with a Magnet Program within the school. Previous experience with this or some other model of block scheduling is presented as years of experience (e.g., 0, 1, 2).

Table 3: Previous Administrator Experience With Block Scheduling

School	Administrator		8 A/B	Mod Block	Magnet Block
Arbor View High School	P	YES	0	3	0
	AP	YES	0	1	0
Canyon Springs High School	P	NO	0	0	0
	AP	NO	0	0	0
Cimarron-Memorial High School	P	YES	0	8	0
	AP	YES	0	3	0
Clark High School	P	YES	0	2	3
	AP	NO	0	0	1

Mojave High School	P	YES	0	1	0
	AP	---	---	---	---
Rancho High School	P	YES	0	10	3
	AP	---	---	---	---
Spring Valley High School	P	YES	1	13	0
	AP	---	---	---	---
Western High School	P	NO	0	0	0
	AP	NO	0	0	0

Eight of the thirteen administrators had previous experience with some form of block scheduling, though only one with the 8 A/B Model. Previous experience with modified block scheduling models ranged from 0 to 13 years and included both middle and high school experience. Three administrators had experience with modified block scheduling as part of a magnet school program.

2.4.3.2 Second-Stage Analysis

Table 4 presents the results for Site-Specific Program Features: Table 5 for Site-Specific Professional Development Opportunities; and Table 6 for Administrator Opinions (see Appendix B for Tables 5A and 6A which present more detailed results).

Table 4

SITE-SPECIFIC PROGRAM FEATURES				
SCHOOLS	**DU [Doubling-Up]**	**CR [Credit Retrieval]**	**E [Elective/s]**	**T [Teaming]**
#1	DU1 DU2		E	
#2	DU1			
#3	DU1 DU2	CR	E	T
#4	DU			T (Core curriculum teams)
#5	DU1		E	
#6	DU1	CR	E*	T (Learning Communities)
#7			E**	T (“teaming . . core subjects . . math, science, English, social studies form a core team [with] common students”)
#8	DU1		E	

Doubling-Up: Six schools used the block scheduling model to implement some form of doubling up of courses. One school used the basic form of doubling up (DU) which involved adding a second section of a course on the alternate day so that the course met every day rather than every other day. Five schools implemented a variation on this basic form (DU1) which involved doubling up by adding a supplemental course session on the alternate day. Typically, the supplemental courses were added for remedial purposes or for extra help purposes. Finally, one school implemented a second variation on the basic form (DU2) which involved doubling up by making it possible for students who failed a course one semester – for example, a first semester course such as English 1A - to take the failed course (Eng 1A) the next semester on the alternate day while also taking the next semester course (Eng 1B) on the regularly scheduled day.

Credit Retrieval: Three schools used the block scheduling model to initiate new or different forms of credit retrieval for credit-deficient students, and six schools used the block scheduling model to implement additional elective courses.

Electives: Six schools designed and offered new or additional elective courses.

Teaming: Three schools created a new form of teacher teaming.

In addition to these programmatic variations, some schools also offered site-specific professional development opportunities for staff. Table 5 presents these results.

Table 5

SITE-SPECIFIC PROFESSIONAL DEVELOPMENT OPPORTUNITIES		
HIGH SCHOOL	**OC [Outside Consultant]**	**TW [Teacher Workshop]**
#1	**NO**	**YES**
#2	**NO**	**NO**
#3	**NO**	**NO**
#4	**YES**	**YES**
#5	**YES**	**NO**
#6	**NO**	**NO**
#7	**NO**	**YES**
#8	**YES**	**N0**

Three schools brought in an outside consultant block scheduling expertise to provide one day of professional development for staff. In addition, three schools involved school staff either in offering workshops for colleagues or in collaborating more informally through class visits or discussions. One school did both, and three schools did neither.

2.4.3.3 Unsolicited Administrator Opinions

During the interviews, administrators offered unsolicited opinions about various aspects of the implementation of 8 A/B Model Block Scheduling at their schools. Table 6 presents these results (Y=Opinion Expressed; N=No Opinion Expressed).

Table 6

ADMINISTRATOR OPINIONS (UNSOLICITED)				
SCHOOL	**Block Impact**	**Teacher Attitudes**	**Student Impact**	**Administrator Support**
#1	**Y**	**Y** [Teachers hired knowing that they would teach in block; strong buy-in]	**Y** [The fact that students come to a new school on block scheduling for the first time allows them to "start with a clean slate" so to speak]	**Y** [Expressed strong support of block scheduling]
#2	**Y**	**Y**	**N**	**N**
#3	**Y**	**Y**	**N**	**N**
#4	**N**	**Y** [teachers can "set stage for learning"; can "focus on depth" rather than "breadth"; can develop "meaningful relationships with students"]	**Y**	**Y** ["Forces change and school reform"]
#5	**Y** [would like to add a "college seminar"]	**Y** [teacher responses to principal survey about Block]	**Y** [somewhat difficult to say exactly at this point]	**N**
#6	**Y** ["progressive principals more successful"; helps "make school fun"; encourages collaboration]	**Y**	**Y** ["student enrollment up at mid-year"; "allows students to be successful"; helps students "choose career path" credit retrieval "failed"]	**Y**
#7	**N**	**Y**	**Y** [Block has had an impact, but "hard to tell whether a smaller learning community program, a career academies program, or a mentorship for each kid by program is the definitive factor in improving student	**Y**

			achievement"; "my prediction is that all four pieces will meld together and you will see increased attendance, increased graduation rate, a lower dropout rate & a higher initial HSPE passage rate"]	
#8	**N**	**Y** [English, science, and social studies teachers like it most; some math teachers "still struggling"; most teachers "have pretty much kept up . . . and we haven't had a lot of complaints . . . the whole thing has been, 'I've got to do this. I've got to use more time. I've got to add"]	**N**	**Y** ["I can see that in . . five years from now it will be just wonderful because we will have figured our ways to perfect things that we do and teachers who are seasoned, already experience ed teachers will have had an opportunity to grow right along with it"]

Teacher Attitudes: Most – though not all - administrators said that their teachers expressed increasingly positive attitudes toward block scheduling as the year progressed. Most administrators also agreed that teachers in some departments (e.g., science and English) expressed more positive attitudes toward block from the beginning than did teachers from other departments (e.g., mathematics). Administrators from the one newly opened school that opened on block scheduling this fall said unequivocally that the fact that teachers were hired for the school knowing that they would be teaching on the 8 A/B Model produced positive attitudes from the beginning. Another principal of a school new to block scheduling said that "in . . . five years from now it [our implementation of block scheduling] will be just wonderful because we will have figured out ways to perfect things" and that teachers will have "an opportunity to grow right along with it."

Student Impact: Administrators expressed more tentative opinions about the impact of block scheduling on students. Those who expressed opinions on this issue said that April of the first year (when the interviews were conducted) is too early to tell much about the extent of the impact of this model of block scheduling on student achievement. At the same time, one principal – experienced with block scheduling - did say that "student enrollment is up at mid-year" and that block "allows students to be successful." Another

administrator, also experienced with block scheduling and optimistic about the long-term impact of block scheduling on students, said that block has had an impact but that it is "hard to tell whether a smaller learning community program a career academies program or a mentorship [program] for each kid is the definitive factor in improving student achievement." All administrators felt that the impact of block scheduling needs to be studied for longer than one year to measure its true impact on achievement.

2.4.4 Summary of Findings: Principal Perceptions

From the administrator interviews, three kinds of variations in program implementation were identified by kind of variation and by school (see Tables 4 – 6 above):

1. site-specific variation in previous administrator experience with some model of block scheduling;
2. site-specific variation in the implementation of program features beyond the basic 8 A/B Model; and
3. site-specific variation in the professional development provided for school staff to support the implementation process.

Table 7 presents a summary description of *the program as implemented*.

Table 7

PROGRAM IMPLEMENTATION: THEME AND VARIATIIONS				
HIGH SCHOOLS	**PREVIOUS ADMINISTRATOR EXPERIENCE (Table 2)**	**SITE-SPECIFIC PROGRAM FEATURES (Table 4)**	**SITE-SPECIFIC PROFESSIONAL DEVELOPMENT OFFERINGS (Table 5)**	**AVID**
#2	NONE	NONE	NONE	Y
#8	NONE	DU1; E (3)	OC	Y
#5	1 YEAR	DU1; E (4)	OC	Y
#4	2 YEARS	DU; T	OC; TW	Y
#1	3 YEARS	DU1; E	TW	N
#3	8 YEARS	DU; CR; E	NONE	Y
#6	10 YEARS	DU1; CR; E*; T	NONE	Y
#7	13 YEARS	CR; E; T	TW	Y

1. All eight high schools implemented 8 A/B Model Block Scheduling as specified.
2. Two principals had no previous experience with any model of block scheduling; in one of those schools, no site-specific variations were implemented in either the program features or professional development categories.
3. In the other school in which the principal had no previous experience with block scheduling, two site-specific program features were implemented, and an outside consultant was brought in to provide professional development for staff.

4. Across the other six schools in which at least one administrator had previous experience with some model of block scheduling:
   - Six doubled up on courses in one way or another;
   - Two developed a new credit retrieval procedure for credit-deficient students;
   - Six offered new electives to take advantage of the new scheduling model;
   - Three developed some form of block-specific teacher teaming;
   - Three brought in outside consultants to provide professional development;
   - Three used the staff expertise for professional development through teacher-led workshops and/or class inter-class visits; and
   - Seven schools had implemented the AVID Program by the beginning of the study year. Only Arbor View High School did not have the AVID Program.

2.5 Documented Program Processes

This section of the report presents the results for two categories of processes:

1. the District's provision of professional development opportunities that addressed Block Scheduling arrangements and instructional practices, and
2. the similarities and differences in the implementation of 8 A/B Model Block Scheduling across the eight study schools.

Two Project Objectives were developed for the Process Outcomes (P1 and P2). Five evaluation questions (QP1a – QP1e) were developed to guide the evaluation of objective P1: the provision of district-level professional development opportunities. Two evaluation questions (QP2a and QP2b) were developed to guide the evaluation of objective P2: possible site-specific variations in the implementation of this scheduling model. Table 8 presents Project Objective P1 and the related Evaluation Questions.

Table 8

PROCESS OUTCOMES	
Project Objectives	**Evaluation Questions**
P1 The District and the project schools will provide common and unique staff development opportunities that address: • Block Scheduling arrangements, and • New instructional practices.	QP1a To what extent did staff development offerings focus upon knowledge and skills necessary for successful implementation of: • Block Scheduling arrangements, and • New instructional practices?
	QP1b In what ways were the staff development offerings at the project schools similar and different?
	QP1c Did the frequency and duration of staff development offerings support and sustain teachers' adjustment to block scheduling?
	QP1d Was the course content research-based?

	QP1e What were the levels of teacher participation in staff development at the project schools?

2.5.1 Findings: By Process Evaluation Question:

2.5.1.1 Staff Development Questions:

QP1a: To what extent did staff development offerings focus upon knowledge and skills necessary for successful implementation of Block Scheduling arrangements, and new instructional practices?

District-wide staff development offerings for administrators focused on the knowledge and skills necessary for successful implementation of Block Scheduling arrangements, and district-wide staff development offerings for teachers focused on new instructional practices relevant to Block Scheduling.

QP1b: In what ways were the staff development offerings at the project schools similar and different?

Five of the eight study schools offered some form of site-specific staff development.

1. Three (3) study schools offered no site-specific professional development for teachers.
2. Three (3) brought in outside consultants to conduct professional development for teachers.
3. Three (3) enlisted expert staff in providing workshops for colleagues.
4. One (1) brought in an outside consultant and involved expert staff in conducting workshops for colleagues.

QP1c: Did the frequency and duration of staff development offerings support and sustain teachers' adjustment to block scheduling?

Documents provided to the evaluators contained no information that could be used to answer this question.

QP1d: Was the course content research-based?

Documents provided to the evaluators yielded findings indicating that the content of district-wide professional development offerings was consistently research-based.

QP1e: What were the levels of teacher participation in staff development at the project schools?

Documents provided to the evaluators contained no information that could be used to answer this question.

2.5.1.2 Block Scheduling Questions

Table 9

PROCESS OUTCOMES	
Project Objectives	**Evaluation Questions**
P2 Project schools will implement 8 A/B Model Block Scheduling.	QP2a What were the characteristics of the Block Scheduling programs as implemented at each project school?
	QP2b In what ways were the Block Scheduling programs similar and different at the project schools?

QP2a: What were the characteristics of the Block Scheduling programs as implemented at each project school?

All eight schools implemented the 8 A/B Model Block Schedule as specified in the guidelines prepared by the District and outlined in Table 1 (p. 3 above). In addition to implementing this block scheduling model as intended, some schools used the opportunity provided by this change in the traditional 6-hour daily schedule to design and implement one or more new programmatic options:

1. Seven (7) schools implemented some form of doubling up of courses.
2. Two (2) schools implemented a new or different form of credit retrieval for credit-deficient students.
3. Six (6) schools added additional elective courses purpose-designed and scheduled to take advantage of the new scheduling model.
4. Four (4) schools instituted some form of teacher teaming (Tables 4 and 7 above).

QP2b: In what ways were the Block Scheduling programs similar and different at the project schools?

Two principals had no previous experience with any model of block scheduling prior to the 2005-2006 school year. In one of those schools, no site-specific variations on the prescribed model were implemented in either the program features or professional development categories. In the other school in which the principal had no previous experience with block scheduling, two site-specific program features were implemented, and an outside consultant was brought in to provide professional development for staff. Across the other six schools in which at least one administrator had previous experience with some model of block scheduling:

- Six doubled up on courses in one way or another;
- Two developed a new credit retrieval procedure for credit-deficient students;
- Six offered new electives;
- Four developed some form of block-specific teacher teaming; and

- Five provided some form of site-specific professional development for staff.

3.0 STUDENT OUTCOMES

This section of the report presents the results for two categories of student outcomes:

3. anticipated increases in student academic achievement and
4. anticipated changes in student attitudes.

Nine Evaluation Questions (QSO1 - QSO9) were developed to guide the student outcomes section of the evaluation. Each question reflects a parallel Project Objective (SO1 - SO9). Questions QSO1 through QSO6 were designed to investigate anticipated increases in students' academic achievement, and questions QSO7 through QSO9 were designed to investigate anticipated changes in students' attitudes.

Table 10 presents the six Project Objectives and the related Evaluation Questions focused on student achievement (see the Logic Model in Appendix C).

Table 10

STUDENT OUTCOMES	
Project Objectives	**Evaluation Questions**
S01 More students will pass the HSPE (in math).	QSO1 Did more students pass the HSPE (in math)?
SO2 More students will become credit sufficient.	QSO2 Did more students become credit sufficient?
SO3 Graduation rates will increase and dropout rates will decrease.	QSO3 Did more students graduate and fewer students drop out of school?
SO4 Students will earn higher grades in English and math.	QSO4 Did English and math grades improve?
SO5 There will be an increase in enrollment numbers in Honors/AP courses.	QSO5 Did more students enroll in Honors/AP courses?
SO6 Students attendance rates will increase.	QSO6 Did students improve their attendance?

3.1 Student Achievement Outcomes

3.1.1 Findings by Evaluation Question

QSO1: Did more students pass the HSPE in math and reading?

Method: The evaluators compared students' passing rate before and after implementation of Block Scheduling in the eight schools. To make this comparison, the evaluators developed baseline pass rates on the math and reading proficiency subtests of the HSPE by analyzing scores from the two-year period prior to the implementation of Block Scheduling (2003-2004 and 2004-2005). The baseline pass rates for these two subtests were then compared with average pass rates on these same subtests for the implementation year (2005-2006) school year for two groups of students:

1. those enrolled in the eight study schools included in the Block Scheduling Program evaluation, and

2. those enrolled in fifteen schools on traditional schedules.

Before conducting the analysis, the evaluators removed HSPE results for schools with unique characteristics (such as charter schools or small rural schools) and for schools that had previously implemented some form of Block Scheduling.

Findings: Math Proficiency: The pass rate on the math proficiency subtest for students in the eight study schools increased from a pre-implementation average of 0.38 to a post-implementation average of 0.42 (see Table 11). This increase was positive but not statistically significant. The average pass rate for students in schools that remained on traditional schedules increased during this period from 0.43 to 0.47. This increase was positive but not statistically significant. The difference in average pass rates increase for the two groups was not statistically significant.

Table 11

MATH PROFICIENCY RESULTS: CHANGE IN AVERAGE PASS RATES				
SCHOOL GROUPS	BASELINE	2005-2006	POSITIVE CHANGE	STATISTICALLY SIGNIFICANT CHANGE
Block Schedule N = 8	0.38	0.42	YES	NO
Traditional Schedule N = 15	0.43	0.47	YES	NO

Findings: Reading Proficiency: The pass rate on the reading proficiency subtest for students in the eight study schools increased from a pre-implementation average of 0.72 to a post-implementation average of 0.79 (see Table 12). This increase was positive and statistically significant. The pass rate increase for students in traditional schedule schools was much smaller: from 0.76 to 0.77. While this change in pass rate was positive, it was not statistically significant. **However, the difference in change in average pass rate for students in the two groups of schools was statistically significant**.

Table 12

READING PROFICIENCY RESULTS: CHANGE IN AVERAGE PASS RATES				
SCHOOL GROUPS	BASELINE	2005-2006	POSITIVE CHANGE	STATISTICALLY SIGNIFICANT CHANGE
Block Schedule N = 8	0.72	0.79	YES	YES
Traditional Schedule N = 15	0.76	0.77	YES	NO

QSO2: Did more students become credit sufficient?

The credit sufficiency data needed to answer this question has not yet been made available for analysis.

QSO3: Did more students graduate and fewer students drop out of school?

Method: The evaluators analyzed graduation rates using the same procedure applied to determine changes in average HSPE pass rates for students in the two groups of schools. This analysis produced average graduation rates for the baseline period of 2003-2004/2004-2005 (pre-implementation), and those baseline graduation rates were compared with the average graduation rates for the study period (post-implementation).

Findings: Graduation Rates: Graduation rates for the eight study schools declined from an average of .54 for the pre-implementation years (2003-2004/2004-2005) to an average of .50 for the post-implementation year (2005-2006). The decline was both negative and statistically significant. Graduation rates for the traditional schedule schools declined from 0.70 to 0.62. This decline was negative and statistically significant (see Table 13).

Table 13

GRADUATION RATE RESULTS: CHANGE IN GRADUATION RATES				
SCHOOL GROUPS	BASELINE	2005-2006	POSITIVE CHANGE	STATISTICALLY SIGNIFICANT CHANGE
Block Schedule N = 8	0.54	0.50	NO	YES
Traditional Schedule N = 15	0.70	0.62	NO	YES

The dropout data needed to answer this question will be available in January, 2007.

QSO4: Did English and math grades improve?

The English and math grades needed to answer this question have not yet been made available for analysis.

QSO5: Did more students enroll in Honors/AP courses?

The data needed to answer this question has not yet been made available for analysis.

QSO6: Did students improve their attendance?

Method: The evaluators analyzed average daily attendance rate change using the same method used to determine changes in average HSPE pass rates for the two groups of schools (see QSO1 and QSO3 above).

Findings re: Average Daily Attendance: The average daily attendance (ADA) rate for the eight study schools increased from 2,384.17 for the pre-implementation period (2003-

2004/2004-2005) to 2,536 for the post-implementation year (2005-2006). The average daily attendance rate for the traditional schedule schools increased from 2,551.46 (pre-implementation) to 2,572.29 (post-implementation). Neither average daily attendance rate change was statistically significant (see Table 14).

Table 14

DAILY ATTENDANCE RATE RESULTS: CHANGE IN DAILY ATTENDANCE RATES				
SCHOOL GROUPS	BASELINE	2005-2006	POSITIVE CHANGE	STATISTICALLY SIGNIFICANT CHANGE
Block Schedule N = 8	2,384.17	2.536	YES	NO
Traditional Schedule N = 15	2,552.46	2,572.29	YES	NO

3.2 Student Attitude Outcomes

Table 15

STUDENT OUTCOMES	
Project Objectives	**Evaluation Questions**
SO7 Students will develop more positive attitudes toward themselves as learners.	QSO7 Did students develop more positive attitudes toward themselves as learners?
SO8 Students will develop more positive attitudes toward school.	QSO8 Did students develop more positive attitudes toward school?
SO9 Students will develop more positive attitudes toward learning.	QSO9 Did students develop more positive attitudes toward learning?

General Method: To answer questions QSO7, QSO8, and QSO9 regarding changes in students' attitudes towards school, towards math, and towards themselves as learners in math classes, the evaluators studied a sample of 345 students enrolled in three distinct 10th grade math courses (remedial, regular and accelerated) in four high schools. Three schools were new to the 8 period A/B Block Schedule Model (treatment group), and the fourth, a demographically similar school, remained on a traditional 6-period schedule (comparison group). Data were collected from both groups by means of classroom observations, student focus groups, and surveys.

Survey results were analyzed using a repeated measures, within subjects design, with the data blocked by schedule, ethnicity and course to better investigate trends. Focus group transcripts and observation field notes were analyzed thematically to corroborate the findings derived from the quantitative data analyses and to provide descriptions of students in process of transitioning to a block schedule. In addition, results were analyzed by course to investigate the effects of block scheduling with students of varying ability levels and differing exposures to academic rigor.

QSO7: Did students develop more positive attitudes toward themselves as learners?

Specific Method: To answer this question, the evaluators randomly selected four students from each course level at each school participate in the student focus group (for a total of twelve from each school). The focus groups were intended to elicit statements from students that could be used to answer this question. A standard Focus Group Protocol (see Appendix D), based on prior research (Kloosterman,1997) and on suggestions from the Block Scheduling Planning Committee, was used to conduct sessions. The three focus group sessions, of approximately 60 minutes each, were conducted in May of 2006 at the treatment group schools. All sessions were recorded and transcribed. Two evaluators analyzed the transcripts to identify recurrent themes that either corroborated or contradicted student responses from the surveys and/or from classroom observations. The evaluators identified the following recurrent themes:

- class activities,
- connections with teachers,
- attitude towards block scheduling,
- student attitudes towards learning math in a block schedule, and
- learning (in general).

Findings: Class Activities: Most students who commented on this issue felt that teachers were not using the additional time provided by Block Scheduling to implement a wider variety of instructional activities.

Findings: Connections With Teachers: Students were divided on whether Block Scheduling led to better connections between students and teachers. Eight students said that it did; six students said that it didn't; and nine commented on this issue without taking a position. Overall, students' comments indicated that they favored seeing each teacher every other day as opposed to every day. Still, several students said that they doubted that this scheduling model had led to the creation of any closer personal connections with teachers.

Findings: Attitudes Towards Block Scheduling: Student attitudes towards block scheduling were generally positive: twenty-one students made positive comments, seventeen made negative comments, and nine made neutral comments. Students did express excitement about having a majority of their academic classes every other day, giving them a "break" day to digest the material and to complete homework assignments. They also indicated that this schedule allowed for better management of time spent on homework and other activities outside of the school day. Interestingly, while several students said that they did not like the "stacked" schedule concept, they did say that it was working well for them and that they were achieving better academically as a result.

Findings: Learning Math in A Block Schedule and Learning (In General): Because few students responded to the questions regarding learning (in general) and learning math on a block schedule, the results were inconclusive.

QSO8: Did students develop more positive attitudes toward school?

Specific Method: To answer this question, the evaluators administered two surveys to the sample of 345 10th grade math students:

1. a revised version of the *Fennema-Sherman Attitude Scale* (Fennema, 1976a) which measures students' attitudes towards mathematics learning, and
2. a *Math Self-Efficacy Measure* (MSEM) purpose-constructed by the evaluators for this study using items representing the four main concepts assessed on the math proficiency section of the HSPE: Algebra and Functions; Numbers and Operations; Geometry; and Probability and Data Analysis.

The surveys were administered in November 2005 (pre) and again in May 2006 (post). Of the 345 students who completed the pre-surveys, 242 completed the post-surveys: 118 from the *treatment group* and 124 from the *comparison group*. The 242 completed pre and post-surveys were analyzed using a within subjects, repeated measures analysis of variance (ANOVA). Course, schedule, school, and gender were blocked to rule out other possible causal relationships that might have overshadowed the effects of block scheduling on student achievement and attitudes.

Findings: Student Attitudes Towards Mathematics: Student attitudes towards mathematics remained stable for the treatment group and declined significantly for the comparison group. The two groups were not statistically equivalent on this measure prior to treatment, with a higher math attitude group mean for the comparison group than for the treatment group.

Findings: Student Feelings of Math Self-Efficacy: Though both groups experienced significant increases in math self-efficacy from pre to post test, **the changes in self-efficacy were significantly greater for the treatment group than for the comparison group**. Additional analyses of the data that were blocked by course and ethnicity revealed that neither of these variables was significantly related to changes in students' sense of self-efficacy or in their attitudes towards learning math.

Additional Findings: Attitudes Towards Math: Sub-scales of the Fennema-Sherman Attitude Scale focus on five student attitude factors about mathematics: Success, Effectance Motivation, Usefulness, Teacher, and Confidence. Item cluster analyses for each sub-scale indicated that:

- the treatment group demonstrated no changes in any of the five constructs over the course of the study, while
- the comparison group demonstrated statistically significant decreases from pre to post test for the Effectance Motivation and Usefulness constructs.

Additional Findings: Math Self-Efficacy: The treatment group demonstrated:

- a statistically significant increase in the Numbers and Operations and Geometry sub-factors,
- no essential change in the Algebra and Functions sub-factor, and
- a non-significant decline in the Probability and Data Analysis sub-factor.

The comparison group demonstrated:

- a statistically significant increase in the Numbers and Operations and Geometry self-efficacy sub-factors,
- no essential change in the Algebra and Functions self-efficacy sub-factor and
- a statistically significant decrease in the study Probability and Data Analysis self-efficacy sub-factor.

The Numbers and Operations and Geometry sub-scale constructs increased significantly for both treatment and comparison groups. Further analysis of these constructs revealed that:

1. the greater gains for the treatment group on the Numbers and Operations factor were found to be statistically significant, and
2. the greater gains for the treatment group on the Geometry factor approached statistical significance.

While a statistically significant difference in favor of the treatment group was found on construct #1 and a difference approaching statistical significance in favor of the treatment group was found on construct #2, the small effect sizes in both cases make the practical significance of the findings questionable.

QSO9: Did students develop more positive attitudes toward learning?

Method: The evaluators conducted a total of fourteen (14) observations in nine (9) classrooms randomly selected from the twenty-two (22) study classrooms. Five classrooms were observed twice (Winter 2005 and Spring 2006); two were observed once (Winter 2005); and two were observed once (Spring 2006). The evaluators used a revised version of a formal classroom observation instrument to conduct the observations (Estacion, McMahon, Quint, Melamud, & Stephens, 2004; see Appendix C).

Findings: Classroom Organization:

1. The desks were set up in straight rows In eleven (11) classrooms.
2. Rules and/or expectations were posted in thirteen (13) classrooms.
3. Daily objectives were written on the whiteboard in five (5) classrooms.
4. Achievement progress (i.e. grades) was posted in seven (7) classrooms.
5. Thirteen (13) teachers were observed using a textbook during their lesson.
6. Five (5) teachers were observed using math manipulatives, special equipment, or other technology during the period.
7. Most teachers were observed using an overhead projector.
8. Most teachers were observed using a classroom computer for administrative tasks.

Findings: Instructional Activities:

1. The instructional activities observed were mostly traditional in nature (e.g., lecture, note-taking, individual practice, review of homework problems, etc.).

2. Six (6) instructors included at least three (3) distinctly different instructional activities in the 85-minute period.
3. When the results for one teacher were removed from the analysis, the remaining teachers averaged almost four (4) distinctly different instructional activities per class period.
4. More than 70 percent of the observed activities consisted of such traditional practices as lecture and large group instruction.
5. Students were observed working in small groups in only three (3) of the fourteen (14) lessons.
6. Though most teachers used an overhead projector and one classroom computer for administrative purposes, further use of technology for instructional purposes was noted in only two (2) classrooms, and, in both instances, students simply observed their teacher using the technology tool(s).
7. A thematic analysis of observation field notes indicated <u>no significant changes in instructional activities over the six month period</u>.

This last finding (#7 above) was substantiated by the results of brief teacher interviews conducted after each observation. These interviews gave teachers an opportunity to indicate to observers whether the class that had just been observed typified their normal teaching routine and the normal behaviors of their students. In approximately 90 percent of these post-observation interviews, teachers indicated that the classes observed typified both their normal teaching routine and the normal behaviors of their students (see Appendix C).

4.0 TEACHER OUTCOMES:

This section of the report presents the results for teacher outcomes. The anticipated teacher outcomes included changes in:

1. their attitudes toward change,
2. their dispositions toward change that supported Block Scheduling,
3. their attitudes towards Block Scheduling,
4. their instructional practices, and
5. their stages of concern.

Five Project Objectives (TO1 – TO5) and five related Evaluation Questions (QTO1 – QTO5) were developed to guide the evaluation of teacher outcomes (see Table 16).

Table 16

TEACHER OUTCOMES	
Project Objectives	**Evaluation Questions**
TO1 Teachers will develop more positive attitudes towards change.	QYO1 Did teachers change their attitudes towards change?
TO2 Teachers will develop dispositions towards change that will support the implementation of Block Scheduling	QTO2 Did teachers develop dispositions towards change that were supportive of Block Scheduling?
TO3 Teachers will develop more positive attitudes towards Block Scheduling	QTO3 Did teachers develop more positive attitudes towards Block Scheduling?
TO4 Teachers will modify their instructional practices.	QTO4 In what ways did teachers adapt their instructional practices as a result of participation in the Block Scheduling program?
TO5 Teachers will make shifts in their stages of concern.	QTO5 In what ways did teachers make shifts in their stages of concern?

Method: To answer questions TO1 – TO5 regarding change in key aspects of teachers' expressed beliefs, attitudes and behaviors, teachers in the eight study schools were asked to complete five questionnaires:

1. Attitudes Towards Block Scheduling (Evaluator designed)
2. Composite Actively Open-Minded Thinking Scale (Stanovich & West, 1997)
3. Stages of Concern Questionnaire (Hall & Hord, 2005)
4. Instructional Strategies (Evaluator designed)
5. Demographic Information (Evaluator designed)

The packet of five surveys was administered twice: in September 2005 (pre-test) on a district-wide staff development day and in May 2006 (post-test), again on a district-wide staff development day. Of the approximately 1600 surveys distributed at each administration, 235 usable pre-test surveys were returned, and 342 usable post-test surveys were returned. To supplement the survey data, the evaluators conducted a focus group in mid-June 2006 for teachers from the study schools who were attending a district-sponsored professional development day on block scheduling implementation

practices. An approved protocol was used as the basis for the focus group. The collection of pre and post implementation data on teacher beliefs, attitudes, and practices allowed for an examination of teacher change, which is lacking in most other studies of block scheduling (Zepeda & Mayers, 2006).

4.1 **Findings: Attitudes Toward Change (TO1)**

Though teachers displayed a wide range of responses to the implementation of this new scheduling model on the study variables of attitudes toward block scheduling, stages of concern, openness to change, and instructional practices on both pre and post-tests, comparative analysis of the pre and post-test responses revealed no statistically significant change in any of the key study variables over time. The analysis also revealed no statistically significant relationships among these variables on either survey administration. Analysis of the demographic variables in relation to these four study variables revealed no patterns of importance.

4.2 Findings: Dispositions Towards Change (TO2)

Teachers did not change their dispositions towards change. It should be noted, however, that dispositions are stable individual differences that tend not to change significantly over time, especially not over a time period of just eight months. At the same time, teachers' openness to change was found to be positively correlated with their positive attitude toward block scheduling.

4.3 Findings: Attitudes Toward Block Scheduling (TO3)

Teachers who expressed positive attitudes towards block scheduling at the beginning of the year expressed more negative attitudes over time. This change of attitude from positive to negative was statistically significant. This finding can be explained in two ways. Either:

- fewer teachers expressed positive attitudes towards block scheduling at the end of the year, or
- those who expressed positive attitudes at the beginning of the year expressed less positive attitudes at the end of the year.

On the other hand, teachers who expressed negative attitudes towards block scheduling at the beginning of the year showed no statistically significant change of attitude in a negative direction over time. This finding may indicate either:

- that teachers who expressed negative attitudes in the fall expressed less negative attitudes in the spring or
- that those who expressed more negative attitudes in the spring were not extreme in their expressed positions.

4.4 Findings: Instructional Strategies (TO4)

Analysis of the instructional strategies measure results indicated that teachers gave the highest rankings to the following instructional strategies:

- "use of discussions to deepen understanding", and
- "use of hands on activities".

The analysis also revealed that teachers gave the lowest rankings to the following instructional strategies:

- "prepare 3+ page written reports",
- "use of community resources", and
- "use of calculators or computers".

Comparative analysis of the pre and post instructional strategies results indicated:

- a statistically significant increase in teachers' reported "use of calculators or computers", and
- a statistically significant decrease in teachers' reported "use of hands-on activities," "use of discussion to deepen understanding," "use of writing reflections," and "use of describing knowledge prior to instruction".

4.5 Findings: Stages of Concern (TO5)

Pre-test results revealed that teachers lacked knowledge of or involvement with the reform effort at the beginning of the year (Stage 0). However, comparative analyses of pre and post-test results revealed a statistically significant change or shift in teachers' dominant level of Stages of Concern from Stage 0 to Stage 6. This change in Stage of Concern suggests that, between survey administrations, teachers developed a greater – and more conscious - emphasis on considering alternatives and improvements.

4.6 Findings: Teacher Focus Group

Teacher responses from the focus group (mid-June 2006) reflect essentially the same findings revealed by the survey data. Most teachers expressed positive attitudes toward block scheduling. In one instance, however, a teacher said that her colleagues generally disliked block scheduling, which directly contradicted the principal of that school who said in the principal interview that teachers at this school generally liked block scheduling.

Teachers also justified their generally positive attitudes towards block scheduling by pointing to:

- the increased student contact time made possible by block scheduling, and
- the increased flexibility of the student contact time also made possible by block scheduling.

Several teachers also indicated that, while they felt the desire to – even the need to - alter their instructional strategies, they also were concerned about both the increased

expectations placed on them by block scheduling and the inconsistent level of support provided for them as they attempted to adapt their teaching to the longer time block. Finally, perhaps as further evidence of their increased Stage of Concern, several teachers suggested ways to improve the scheduling format.

5.0 DISCUSSION OF FINDINGS

5.1 The Program "As Implemented" in the Eight Study Schools

Though all eight study schools implemented 8 A/B Model Block Scheduling as specified in the District guidelines, all but one school went beyond the specified model to implement additional, site-specific program features and/or site-specific professional development opportunities to provide staff support for the implementation process. These additions constituted variations in the program "as implemented," and these variations varied by school site.

The evaluators identified a generally consistent pattern of relationship between the amount of previous site administrator experience with some form of block scheduling and the number and extent of new, block-related initiatives implemented in addition to the basic block model. In general, the more previous site administrator experience with block scheduling the wider the range of additional, block-related initiatives undertaken.

Administrators with no previous experience with block scheduling seemed more likely to see the implementation of this scheduling model as constituting essentially the entire challenge for school staff – at least for the first year of implementation. In fact, one principal with no previous experience stated as much in the interview, saying that staff at this school had its hands full simply implementing this scheduling model during the first year. At the same time, this principal had already begun to involve staff in planning new initiatives to add to the basic block model during the second year of implementation.

In contrast, those administrators with more previous experience with block scheduling were more likely to look beyond the immediate challenge of implementing this block scheduling model to see the possibilities or opportunities this model offered for developing new approaches to the solution of ongoing problems. These site administrators expressed the belief that their respective staffs not only could implement this scheduling model but also could plan and add creative, new initiatives related to, and designed to capitalize on, this model. Across the spectrum of experience, and perhaps of vision, the questions for site administrators appeared to be: How do we implement this scheduling model? vs. How do we use this model to do other things that are important for our students?

5.2 Outcomes:

5.2.1 <u>Student Achievement</u>

As reported above, several positive findings resulted from the analyses of the various kinds of student achievement data available to date. Some of these findings were statistically significant, and some, though positive in direction, were not statistically significant. For example, the increase in pass rate on the reading proficiency sub-test of the HSPE for students in the eight study schools not only was positive but also was statistically significant. Moreover, when this pass rate increase was compared with the

non-significant pass rate increase for students in the fifteen schools that remained on the traditional, 6-period schedule, the difference in change in pass rate between students from the two groups of schools was also statistically significant.

In contrast, the increase in pass rate on the math proficiency sub-test of the HSPE, though positive, was not statistically significant. Further, when this pass rate increase was compared with the also non-significant pass rate increase for students in the fifteen schools that remained on the traditional, 6-period schedule, the difference in change in pass rate between students from the two groups of schools was also statistically non-significant.

Changes in attendance rates followed a similar pattern for changes in HSPE math proficiency results. Both groups of schools showed a positive rate of change, but neither rate of change was statistically significant. Moreover, though the rate of change in attendance rates was greater for the eight study schools than for the fifteen other schools, the difference in rates of change was not statistically significant either.

The only negative change was in graduation rates. Those rates declined for both groups of schools, and both rates of decline were statistically significant.

The findings available at this point appear to suggest that the first year of implementation of 8 A/B Model Block Scheduling in the eight study schools has had both positive and negative effects on selected student achievement factors. Some of the positive effects have also been found to be statistically significant, while others have not. The negative effects have been found to be statistically.

The possible meaning and implications of these findings can be discussed only tentatively at this point in light of the fact that the results of the analyses of possible changes in Honors/AP enrollments, in English and math grades, and in drop out rates are not yet available. These findings, when they become available, may change the overall outcomes picture somewhat – or even considerably.

Nonetheless, when these interim findings are examined in light of the conclusions about the effects of block scheduling on standardized test scores and attendance rates presented in the most recent comprehensive review of research on block scheduling (Zepeda & Mayers, 2006), certain interesting points arise.

1. For example, the authors state that "while attendance rates were generally improved, several studies reported that block scheduling had no effects on attendance rates." The fact that this study shows positive, though non-significant effects on attendance rates after just one year is encouraging.
2. The authors also state that "the effect of block scheduling on test scores was inconsistent" while the findings reported here indicate positive changes in both reading and math proficiency pass rates on the HSPE. This finding is also encouraging.

5.2.2 Student Beliefs and Attitudes

Three positive findings were produced from the analysis of the student survey results:

1. Students in the three treatment high schools showed significantly greater positive gains in their attitudes towards learning and towards themselves as learners than students in the comparison high school.
2. Students in the three treatment high schools held more stable attitudes towards math while their comparison counterparts experienced significant decreases on this factor.
3. Students of varied ethnic/racial backgrounds and of varied academic experiences responded similarly to the implementation of this scheduling model.

These findings are encouraging because they suggest that block scheduling can have a positive effect on students' attitudes towards school, towards math, and towards themselves as math learners. Moreover, these findings are somewhat unique in relation to previous research findings. While Zepeda and Mayer (2005), in their review of research on block scheduling, do state that "most studies suggested that students' perceptions of block scheduling were positive" (p. 155), they also found no previous studies that examined the effect of block scheduling on students' attitudes towards learning or, particularly, their attitudes towards themselves as math learners.

These generally positive changes in students' attitudes contrast, though, with the findings about teachers' instructional practices. The observations of the math classes attended by these students revealed little change over the course of the study period either in the ways teachers' organized their classrooms or in the kinds or types of instructional practices or strategies that they employed. In other words, from the perspective of classroom organization and variety of instructional practices, these math classrooms looked essentially the same in the spring as they did in the fall. Moreover, while some schools provided additional time for staff members to serve as mentors to students and to build smaller learning communities, other schools broke block periods into smaller segments in order to provide each student access to the cafeteria to eat lunch.

Despite the lack of change in instructional practices or classroom organization over the year, students from these classrooms who participated in the focus groups expressed either positive feelings or indifference to block scheduling. Perhaps, students don't expect teachers to change their practices much if at all. They don't, apparently, expect a change in the scheduling model by itself to produce closer connections with, or more individual support from, teachers. This finding is in direct contradiction to the claim made by block scheduling proponents that this scheduling mode not only provides more time for teacher-student contact but also leads to stronger connections between teachers and students. In fact, the reasons students gave for feeling positively about block scheduling had little to do with their daily classroom experiences or their relationships with teachers.

The focus groups also produced an important, though unanticipated, finding. Those students who had a majority of their academically challenging courses scheduled on the

same day indicated that they very much liked this arrangement. Though this scheduling phenomenon, when it occurred for particular students, was apparently not intended when schools built student schedules, the overwhelmingly positive - and unsolicited - responses from students with regard to this unanticipated outcome deserve consideration.

5.2.3 Professional Development

District-wide professional development offerings were found to be both research-based and appropriate. That is, for administrators the offerings focused on the knowledge and skills necessary for successful implementation of Block Scheduling arrangements, and, for teachers, the offerings focused on new instructional practices relevant to Block Scheduling. By themselves, these findings are encouraging. However, when these findings are examined in light of the negative change in both teachers' expressed attitudes towards change and towards block scheduling and of the evidence of the lack of change in their instructional practices, these professional development offerings appear either not to have reached enough teachers or not to have reached enough teachers with enough effect.

5.2.4 Teacher Attitudes, Beliefs, and Practices

Between September 2005 and May 2006, neither teachers' attitudes toward change nor their dispositions to change changed significantly. Moreover, teachers' responses revealed no important demographic differences in regard to either of these constructs. However, both attitudes and dispositions are stable individual differences that tend to change gradually over time if they change at all - especially over a time period as short as eight months. It is important to note, though, that teachers' openness to change correlated positively with their positive attitude toward block scheduling.

At the same time that teachers' attitudes towards change and their dispositions to change remained stable, their attitudes towards block scheduling did change. On one hand, teachers who expressed positive attitudes towards block scheduling at the beginning of the year expressed significantly more negative attitudes over time. On the other hand, teachers who expressed negative attitudes towards block scheduling at the beginning of the year showed no statistically significant change of attitude in a negative direction over time. It is difficult to attribute either the change in attitude or the lack of change in attitude to any particular aspect of their experience: whether to the scheduling model itself, to their site administrators' attitudes and actions, to interactions with their colleagues, to difficulties in adapting their instruction to the longer class periods, to negative responses from their students, or to some perceived lack of site-level or district-level support.

The findings on self-reported changes in instructional practices are also interesting. In September 2005, teachers gave the highest rankings to two instructional strategies: "use of discussions to deepen understanding" and "use of hands on activities". By May 2005, teachers gave significantly lower rankings not only to these two instructional strategies but also to two related instructional strategies: "use of writing reflections," and "use of

describing knowledge prior to instruction". Moreover, from the beginning teachers gave the lowest rankings to "prepare 3+ page written reports" and "use of community resources".

These six instructional strategies, taken together, are the ones most likely to foster students' development of a deeper conceptual understanding of curriculum content, particularly intellectually challenging content. In fact, the only statistically significant increase occurred in teachers' reported "use of calculators or computers". Coupled with the results of the observations performed in fourteen math classes in three study schools (see p. 19 above) showing little change over time in teachers' instructional practices, these teacher self-report results are not encouraging. Several explanations are possible:

- Teachers were not committed to using a wider and more appropriate range of instructional strategies to accommodate to the longer class periods.
- Teachers were not adequately supported by professional development opportunities in making appropriate adaptations or changes in their instructional practices.
- Teachers were not committed to fostering deeper understanding of conceptually challenging material by students.
- Teachers did not see the instructional practices that foster students' development of deeper understanding of conceptually challenging material as leading to the retention of the kinds of information that might increase students' performance on standardized tests.

The mixed findings from this study, coupled with the wide variation across sites in the actual program "as implemented," make it difficult to gauge the overall effects of this block scheduling model. From their review of 58 studies of block scheduling, Zepeda and Mayers (2006) concluded that "many teachers and students liked block scheduling," though "why" they liked it was "unclear." The findings of this study also suggest that students generally liked block scheduling, though their reasons were not entirely clear either. In contrast both to the students in this study and to other research findings, teachers liking for block scheduling declined rather than increased.

Finally, while Zepeda and Mayers (2006) found that they could "not state with confidence that teachers' instructional strategies changed or, if there were changes, what long-term effect the changes had on student learning." The same situation obtains for the findings of this study. There is no evidence that teachers' instructional strategies changed over time, nor that whatever changes might have occurred resulted in improved learning, whether measured by course grades or by standardized test scores.

Clearly, though, professional development is important to any possible change in teachers' instructional practices and, in turn, to possible improvements in students' learning and test performance. At the same time, the range of site-specific implementation differences and of other relevant intra-school factors presents a great challenge. "One size fits all" professional development may not adequately meet the needs of all teachers in all situations. While simply changing the daily school schedule does appear to be related to some changes in beliefs, attitudes, and practices, more

training and support apparently need to be provided in order to make these changes more pervasive and more permanent.

Clearly, also, the kind of leadership provided by site administrators and the kinds of beliefs and attitudes held by teachers at those sites are both key to the long-term success of this scheduling model. Moreover, these two factors are typically so intimately and intricately intertwined that only a carefully designed, longer-term study could produce the kinds of evidence that would make it possible to clarify their relationship and their respective effects on student and teacher outcomes.

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7.0 APPENDIX A

BLOCK SCHEDULING PROGRAM EVALUATION

CLARK COUNTY SCHOOL DISTRICT
DEPARTMENT OF RESEARCH AND ACCOUNTABILITY
AND
CENTER FOR EVALUATION AND ASSESSMENT
UNIVERSITY OF NEVADA, LAS VEGAS

PRINCIPAL INTERVIEW PROTOCOL

Prior Experience

Interviewer: We would like to know if you have had any previous experience with Block Scheduling.

Q1: Have you ever worked in a school that has used Block Scheduing?
If so, in what capacity? As an administrator? A teacher?
How long were you in that/those school(s)?

Q2: How long has (school name) been on Block Schedule?

Implementation

Q3: What do you consider to be key features of the implementation of Block Scheduling at your school?

Q4: Do you see any of these features as being unique to your school?
How do you know?
Please tell us why you have adopted these unique features?

Preparation/Professional Development

Interviewer: Apart from District and Region professional development workshops/training sessions, we would like know if your (school name) has done any additional preparation for Block Scheduling.

Q5: What are the professional development activities that have gone on at our school?

Q6: Do you see any of these PD activities as being unique to your school?
How do you know?

Q7: Which departments participated in this/these PD opportunities?

Q8: How many teachers (% of staff) participated in these offerings?

Q9: In what way(s) do you think these PD opportunities have benefited your staff? Your school?

Student Outcomes

Q10: Have there been any new or different opportunities provided for your students as a result of your implementation of Block Scheduling?
In terms of remediation?
In terms of Advanced Placement and Honors classes?

Q11: Can you think of a way – or ways – that Block Scheduling has had a positive impact on:
Your students?
Your staff?

Q12: What are your two biggest concerns with Block Scheduling?

8.0 APPENDIX B

Table 5A

SITE-SPECIFIC PROGRAM FEATURES				
HIGH SCHOOLS	**DU [Doubling-Up]**	**CR [Credit Retrieval]**	**E [Elective/s]**	**T [Teaming]**
Arbor View	DU1 - Read 180/Eng 1 - Alg 1A/Alg Fundamentals DU2 - Eng 1B/Repeat Eng 1A		Already have unique elective course offerings	
Canyon Springs	DU1 Read 180/Eng 1A/B			
Cimarron-Memorial		DU (?)	[Offered some new electives]	
Clark High School	DU - Math - Read 180 - Science - Band - Orchestra			Core curriculum teams ("help spread Block to rest of staff"]
Mojave High School	DU1 - Math/Math Lab - Eng/Eng Lab		Classes for: - Guitar - Strings - Band - Auto mechanics	
Rancho High School	DU1 - Calculus/Study Hall - Some Double-Blocked classes	- Fail ALG 1 (Fall) -> Retake ALG 1 (Spring) - ALG-GEOM (Fall/Spring cycle)	Developed 187 new elective courses Developing cycle of advanced electives	Learning Communities
Spring Valley			Number of elective course offerings limited only by space issues ("we're out of room . . I could fill the auto shop, wood shop, band room twice over . . ")	"teaming . . with the core subjects: the math, science, English, social studies form a core team who have common students who move between them"; teams across grades

Western	DU1 - Read 180/Eng 1 - Alg 1A/Fund Math Concepts		- Study Skills - Two For Success - VITA (Latin Music Group)	

Table 6A

SITE-SPECIFIC PROFESSIONAL DEVELOPMENT OPPORTUNITIES		
HIGH SCHOOL	**OC** **[Outside Consultant]**	**TW** **[Teacher Workshop]**
Arbor View	**N**	**Y** Implemented informal teacher collaboration: 1) class visits: Botany/Foods; English/Foreign Language 2) use of Robert Marzano's effective teaching strategies
Canyon Springs	**N**	**N**
Cimarron-Memorial	**N**	**N**
Clark	**Y**	**Y**
Mojave	**Y**	**N**
Rancho	**N**	**N**
Spring Valley	**N** [For 2006-2007, plans to bring in an OC to train the new teachers on "teaming and the teaming process"]	**Y**
Western	**Y**	**N** Used Structured Teacher Planning Time to discuss teaching in Block Scheduling

9.0 APPENDIX C

Classroom Observation Protocol

General Information

1. Date _____ 2. Time _____ 3. Teacher Name _____

3. Class _____ 4. Room # _____ 5. School _____

6. Students Enrolled _____ 7. Student Present_____

8. Pattern of Desks (Check the appropriate pattern)

_____ A. Rows – desks in straight-line rows.
_____ B. Small Groups – desk placed in small groups of 3-4
_____ C. Semi-Circle – Chairs or desks are placed in a semi-circle with students facing each other.
_____ D. Table Seating – Tables rather than desks (Shape _____)

_____ E. Other – Describe: _____

Equipment/Materials Present (1=seen; 0=not seen)

9. _____ Texts/workbooks (including library books and magazines)

10._____ Math Equipment (manipulatives)

11._____ Math Equipment (compasses, protractors, etc.)

13. Postings

13a. _____ Rules/expectations

13b._____ Behavioral expectations

13c._____ Academic expectations (rubrics/processes, etc.)

13d._____ Achievement progress

13e._____ Daily Objectives

13f. _____ Instructional charts

13g._____Other: _____

Audio-Visual Equipment

14._____ Computer(s) 14a._____ Student use

14b._____ Teacher use

15._____Overhead Use

16._____PowerPoint

17. _____ Other: _____

Running Record Form

Cycle #1: (time:_____ to_____)

Activity Description: _____

Activity Type: ☐ Individual ☐ Small Group ☐ Large Group ☐ Lecture

Technology: _____ ☐ Teachers ☐ Students

% of Students Engaged: _____

Teacher Doing	**Students Doing**

Comments:

Post-Observation Teacher Interview

I have just a few questions I'd like to ask you.

1. How many students are enrolled in this class? _____
2. Could you please tell me where in the lesson you were teaching falls in relation to the unit that it's part of—near the beginning of the unit, at the middle of the unit, toward the end of the unit, or is it unrelated to the unit?
    i. __beginning of the unit
    ii. __middle of unit
    iii. __end of unit
    iv. __unrelated to unit
3. Is this lesson part of a larger *project* related to the unit?
4. How typical would you say this particular class was of the way the class generally operates and of the way you teach?

The Way the Class Operates	The Way They Teach
___ typical	___ typical
___ untypical	___ untypical

    a. If "untypical", in what way(s) was it different?

Thank you so much for your time

10.0 APPENDIX D

Focus Group Questions

Do you see your teachers conducting different activities on a block schedule compared with last year (on a traditional schedule)?

Do you feel that students have enough time to digest and understand the math concepts considering there is less contact hours?

Are you concerned about having less contact time not only with the teacher but with the subject? Since Math is so "review heavy" do you have a hard time understanding?

Do you feel overwhelmed? Since more concepts would be introduced each class period, do you struggle?

Are you still able to make strong connections with teachers?

When learning a new topic in mathematics, do you try to see how it relates to other math topics or topics you have learned before? Is relating new topics to other topics something your teacher stresses?

How are you graded on block schedule and how does it compare to grading procedures in previous years not on a block schedule?

On a scale of 1 to 10, with 10 being the highest, how much do you like block schedule? What specific things do you like and dislike about block schedule?

Does (or would) the practice of letting some students do more or less work than others affect how hard you work in the class where this happens? (Probe for examples).

How do you like math in comparison to other subjects? Are the factors that make you work hard in other subjects different from the ones that make you work hard in math?

Are you influenced by what your friends think about block scheduling? How do they influence you?

Do you care about what your classmates and teacher think of your skills in math? Is it important to you to look like a good math student or poor math student to your friends and teacher? (look for evidence of an ego-orientation [trying to do better than others])

Do teachers allow you to complete homework during class time?

11.0 APPENDIX E