BLOCK SCHEDULING STUDY: YEAR TWO (BSS-Y2)
Clark County School District

OVERVIEW

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Block scheduling is a relatively recent development in high school education that current research has suggested can improve high school student academic outcomes, teaching, and learning environments. Fewer, longer classes reportedly allow new styles of teaching and more innovation into a single class period. It permits movement away from a reliance on traditional direct instruction in the form of lectures. Advocates of the Block assert that education can become less stressful, more relaxed, and more enjoyable for both teachers and students, thus providing more positive educational outcomes.

The Clark County School District concluded the second year of a study that evaluated the effectiveness of block scheduling. The study examined not only particular student outcomes (increased credit-sufficiency, graduation rates, Nevada High School Proficiency Exam (NHSPE) pass rates, Iowa Test of Educational Development (ITED) scores, etc.) but also other important intervening variables such as teacher and administrator attitudes toward teaching in a block scheduling environment; and student attitudes towards learning, their teachers, and their school. In addition, BSS-2 used survey data to examine student, teacher, and principal attitudes and beliefs about the Block and their relationship to instructional practices.[1]

The effects of block scheduling on students were measured by comparing the mean standard score and pass rate of students on the ITED and NHSPE. to students in traditional schools. The effects of block scheduling were isolated and estimated by controlling for other variables known to affect student performance. Specifically, control variables included student ethnicity, gender, if the student had an Individualized Education Plan (IEP), and were designated as Limited English Proficient (LEP). Additional control variables included whether students qualified for Free or Reduced Lunch (FRL) or for gifted and talented services.

Summary of Results

Several models were used to estimate effects of block scheduling because all block schools did not convert from traditional to a block schedule in the same year. Some literature suggests that

[1] Data for graduation rate changes, drop-out rate changes, and student course selection patterns, particularly for credit deficient students, were not available for this summary. As these data become available, additional results will be reported.

there is a “temporal lag”, or that it takes time for any new school-wide reform to show effect on student outcomes (Borman, G.D., Hewes, G.M., Overman, L.T., & Brown, S., 2003; George, M. P., White, G.P., & Schlaffer, J. J., 2007; McDougall, D., Saunders, W. M., & Goldenberg, C., 2007; Schlechty, P.C., 2001; Shadish, 2006; Stevens and Zvoch, forthcoming). In fact, recent research on this “temporal lag” suggests that it can take from three to five years to see effects with regard to student outcomes. Therefore, the length of time a school has been in a block schedule could be significant with regard to effect on student outcomes. With this in mind, researchers of this study created three models based on disaggregating student data into “experienced” block schools (three or more years in a block schedule), “inexperienced” block schools (one or two years in a block schedule), and traditional schools. Comparisons of the three discrete groups were analyzed using three different models:

- Model 1: Student attending all block schools were compared to students in traditional schools.
- Model 2: Students in “experienced” block schools (3+ years in a block schedule) were compared to students in “inexperienced” block schools (1 or 2 years in a block schedule).
- Model 3: Students in experienced block schools compared to students in traditional schools.

All Block Schools and Traditional Schools

In the tables below:

- *Figures in* **bold** *indicate statistical significance.*
- *Figures in* **red** *indicate statistically significant differences that show students who attended block schedule schools are scoring lower than students in traditional schools.*
- *If analysis results are NOT significant, they are reflected in tables as "ns" (ns = not significant).*

The following table shows the mean standard score difference on ITED reading, mathematics, and science exams, NHSPE reading test between students who attended schools with block scheduling and students who attend traditional schools.

- For each ITED and NHSPE test score analysis, the mean standard score for students who attended block schedule schools was statistically significantly lower than the mean standard score for student in traditional schools.
- For NHSPE percent pass rate analysis, the percent of students passing the mathematics portion of the test was significantly lower for students attending block schools that for students attending schools with traditional schedules.
- There were no differences in pass rate between students attending block schools and students attending traditional schools with respect to the NHSPE reading test.

All Block Schools Compared to Traditional Schools – ITED and NHSPE 2006-2007

ITED and NHSPE Standard Score	All Block Schools Student Mean Standard Score	Traditional Schools Student Mean Standard Score	Point Difference	T-test - Statistical Significance (p-value)	N	OLS Regression p-value (with control variables)
ITED Reading Total	**251.25**	**255.92**	**-4.67**	**p < .000**	**17,320**	**P < .000**
ITED Math Total	**252.77**	**257.28**	**-4.51**	**p < .000**	**17,061**	**P < .000**
ITED Science	**248.61**	**254.36**	**-5.75**	**p < .000**	**16,880**	**P < .000**
NHSPE Math	**296.69**	**300.9**	**-4.21**	**p < .000**	**15,932**	**p < .034**
NHSPE Reading	**290.30**	**293.94**	**-3.64**	**p < .000**	**15,880**	ns
NHSPE PASS RATE	**Percent of Block Students Passing**	**Percent of Traditional Students Passing**	**Percent Difference**	**T-test - Statistical Significance (p-value)**	**N**	**Logistic Regression p-value (with control variables)**
NHSPE Math Pass Rate	**51.95**	**55.65**	**-3.70**	**.000**	**15,932**	**p < .016**
NHSPE Reading PASS Rate	80.60	80.99	-0.39%	ns	15,880	ns

Experienced Block Schools and Inexperienced Block Schools

In the tables below:

- *Figures in* **bold** *indicate statistical significance.*
- *Figures in* **red** *indicate statistically significant differences that show students who attend experienced block schedule school are scoring lower than students in inexperienced block schedule schools.*
- *If analysis results are NOT significant, they are reflected in tables as "ns" (ns = not significant).*

The following table shows the mean standard score difference on ITED reading, mathematics, and science exams, NHSPE reading test between students who attended experienced block schedule schools with students who attend inexperienced block schedule schools.

- For each ITED and NHSPE test score analysis, the mean standard score for students who attended experienced block schedule schools was statistically significantly higher than the mean standard score for student in inexperienced block schools.
- For NHSPE percent pass rate analysis, the percent of students passing both the mathematics and reading portion of the test was statistically significantly higher for students attending experienced block schools that for students attending inexperienced block schools.

Experienced Block Schools Compared to Inexperienced Block Schools – ITED and NHSPE 2006-2007

ITED and NHSPE Standard Score	Experienced Block Schools Student Mean Standard Score	Inexperienced Block Schools Student Mean Standard Score	Point Difference	T-test - Statistical Significance (p-value)	N	OLS Regression p-value (with control variables)
ITED Reading Total	**256.95**	**248.15**	**8.80**	**.000**	**10,341**	**p < .000**
ITED Math Total	**257.31**	**250.18**	**7.13**	**.000**	**10,113**	**p < .000**
ITED Science	**254.37**	**245.24**	**9.13**	**.000**	**9,774**	**p < .000**
NHSPE Math	**306.13**	**291.62**	**14.51**	**.000**	**9,510**	**p < .000**
NHSPE Reading	**298.40**	**291.62**	**12.45**	**.000**	**9,469**	**p < .000**
NHSPE PASS RATE	**Percent of Experienced Block Students Passing**	**Percent of Inexperienced Block Students Passing**	**Percent Difference**	**T-test - Statistical Significance (p-value)**	**N**	**Logistic Regression p-value (with control variables)**
NHSPE Math Pass Rate	**59.33**	**47.95**	**11.38**	**.000**	**9,510**	**p < .000**
NHSPE Reading PASS Rate	**84.61**	**78.48**	**6.14**	**.000**	**9,469**	**p < .000**

Experienced Block Schools and Traditional Schools

In the tables below:

- *Figures in* **bold** *indicate statistical significance.*
- *Figures in* **red** *indicate statistically significant differences that show students who attend experienced block schedule schools are scoring lower than students in traditional schools.*
- *If analysis results are NOT significant, they are reflected in tables as "ns" (ns = not significant).*

The following table shows the mean standard score difference on ITED reading, mathematics, and science exams, NHSPE reading test between students who attended experienced block schedule schools with students who attended traditional schedule schools.

- For each ITED test score analysis (mathematics, reading, science) there were no differences in mean standard score between students attending experienced block schools and students attending traditional schools.
- For both NHSPE standard score in mathematics and reading, the mean standard score for students who attended experienced block schedule schools was statistically significantly higher than the mean standard score for student in traditional schedule schools.
- For NHSPE percent pass rate analysis, the percent of students passing both the mathematics and reading portion of the test was statistically significantly higher for students attending experienced block schools that for students attending traditional schedule schools.

Experienced Block Schools Compared to Traditional Schools – ITED and NHSPE 2006-2007

ITED and NHSPE Standard Score	Experienced Block Schools Student Mean Standard Score	Traditional Schools Student Mean Standard Score	Point Difference	T-test - Statistical Significance (p-value)	N	OLS Regression p-value (with control variables)
ITED Reading Total	256.95	255.82	1.13	ns	10,681	ns
ITED Math Total	257.31	257.21	0.10	ns	10,681	ns
ITED Science	254.37	254.28	0.09	ns	10,755	ns
NHSPE Math	**306.13**	**300.74**	**5.39**	**.000**	**9,803**	**.012**
NHSPE Reading	**298.40**	**293.80**	**4.60**	**.000**	**9,784**	**.010**
NHSPE PASS RATE	**Percent of Experienced Block Students Passing**	**Percent of Traditional Students Passing**	**Percent Difference**	**T-test - Statistical Significance (p-value)**	**N**	**Logistic Regression p-value (with control variables)**
NHSPE Math Pass Rate	**59.33**	**55.56**	**3.78**	**.000**	**9,803**	**.030**
NHSPE Reading PASS Rate	**84.61**	**80.99**	**3.62**	**.000**	**9,784**	**.001**

Overview

The block reform, in general, has shown mixed effects in recent literature. The CCSD *Block Schedule Study – Year Two* shows that when grouping all block schools together with regard to length of time in block, that no inferences can be made. However, when grouping schools together in terms of "block experience", significant positive effects can be seen across most students and student subgroups on the NHSPE exam. Over time the block reform's effects have improved, and even surpassed traditional schedule schools performance on NHSPE exams. On other exams (ITED), students in block schedule schools and students in traditional schools performed approximately equivalently.

The third year of reform appears to represent a benchmark. The block reform did have a positive effect on a small percentage of student, teacher, and administrator attitudes, but teachers still expressed concerns about students' abilities to stay focused under the block, whether it produced better quality students, among other concerns. These concerns were validated by the student test score results when not controlling for temporal effects. Students, teachers, and site administrators at block schools tended to favor the block reform, notwithstanding the concerns they have about student abilities under the block.

What this analysis strongly suggests is that there is a temporal effect that occurs when implementing block scheduling. Outcomes of this reform, along with other systemic or school-wide reforms, take time to be reflected in student outcomes. The CCSD Block Schedule Study – Year Three will be able to provide more evidence of these effects.