

Traditional and Block Scheduling for College Science Preparation: A Comparison of College Science Success of Students Who Report Different High School Scheduling Plans

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This study compares frequencies of instructional practices across differing scheduling plans (Traditional and Block plans), and explores the association between high school scheduling plans and college science preparation, using introductory college science grades as the outcome measure. More than 7000 students enrolled in introductory college biology, chemistry, and physics were surveyed. No large difference was found when comparing the use of frequencies of instructional practices across scheduling plans. Regression models investigating associations between scheduling plans and college grades found significant, but small differences in predicted college grades for Traditional, 4:4, and Unique Block students; however, the analysis found two negative interactions on college grades linking alternate Block (AB) with HS science achievement and AB block with peer tutoring. Overall, the results indicate that Block scheduling plans do not appear to provide an advantage to students in terms of college preparation in science.

Learning in America is a prisoner of time. For the past 150 years, American public schools have held time constant and let learning vary. The rule, only rarely voiced, is simple: learn what you can in the time we make available. It should surprise no one that some bright, hard-working students do reasonably well. Everyone else – from the typical student to the dropout – runs into trouble.

From Prisoners of Time (1994)

Introduction

Since the mid 1990s, many states have shifted from existing Traditional scheduling systems to Block scheduling, with many voices on each side (Canady & Rettig, 1995; Lindsay, 2000).¹ Recently, the No Child Left Behind initiative and Virginia state guidelines have focused an introspective lens on educational topics like intensity of class time and restructuring of school days. Educators, administrators, and students strive to find a schedule that allows for greater retention, provides for adequate time,

and produces high academic achievement across all subject areas. The most recent estimate is that about 50% of American secondary schools are on some form of Block scheduling, including alternate-day blocks of all-year scheduling (Wild, 1998). For example, according to Short & Thayer (1998 – 1999), 168 of Virginia's 294 high schools were using some form of Block scheduling. Some advantages become clear within these modified scheduling frameworks. Varied and innovative methods of teaching can be incorporated as the old lecture style becomes incompatible with new, longer classes. The daily schedule gains flexibility, making it more conducive to team teaching, multidisciplinary classes, labs, and fieldwork (Center for Education Reform, 1996). Given that these forms of pedagogy are often applied in science classes, it seems reasonable to explore the impact of scheduling plan on student achievement in this discipline. Traditional teachers often had "lab envy" because Block teachers could complete an entire lab in a day (Veal, 2000). However, Block scheduling does not increase total class time and often reduces it, for example when two 50-minute periods are replaced with a single 90-minute class (Bennett, 2000). The potential benefit of Block scheduling appears to lie with the extended block of time. Management of class time appears within the National Science Education Standards. For example, the first bulleted item in Teaching Standard D states that "Teachers must: ...Structure the time available so that students are able to engage in extended investigations" (NRC, 1996, p. 43). As a result, some have cited Block scheduling as a means of addressing these standards (Bernard, 2005).

A number of studies have compared Traditional and Block scheduling plans in terms of students' test scores and GPAs, two measures of academic success. Bateson (1990) conducted a nation wide study in Canada to investigate if science students experience greater success in Traditional or Block schedules. The results indicated that Traditional-schedule students outperformed better Block students in junior-level secondary science. Deuel (1993) used four recognized measures of academic performance in Florida: grade distribution, the Florida Writing Assessment scores, Grade 9 Stanford Achievement Test, and High School Competency Test. Deuel found no significant differences between Traditional and Block scheduling. On the other end of the spectrum, Veal (2000) found many positive effects resulting from Block scheduling. The existing literature on the effectiveness of Block scheduling plans is considerable (e.g. Arnold, 2002; Marchant & Paulson, 2001; Muyskens & Ysseldyke, 1998; Ryan, 1996; Rikard & Banville, 2005; Thomas, 2001; Winans, 1997; Wyatt, 1966)

Numerous articles exist to support the whole spectrum of views on Block scheduling. The collective body of research shows improvements associated with scheduling plan changes, apparently without regard to what happens within the actual class period. These varied results raise the question whether high school test scores and GPA's are adequate indicators of schedule plan impact. It becomes necessary to step back and see if the Block scheduling actually reduces the fragmentation inherent in single-period schedules, a criticism that is especially pertinent to classes requiring extensive practice and/or laboratory work. In addition, this change provides teachers with blocks of teaching time that allow and encourage the use of active teaching strategies and greater student involvement (Canady & Rettig, 1996).

With respect to teachers, the intention of changing to Block is to incorporate varied methods of teaching and, as a result, engage students in the learning process through a wider variety of instructional practices. Initial studies stated that there is no evidence that Block scheduling

1 Traditional schedules range from six to eight periods a day for an entire year with the length of time in class spanning from forty-five to fifty-five minutes. Among Block scheduling plans, one of the most popular choices is A/B Block scheduling, which is three to four classes every other day for an entire year with class time spanning seventy-five to ninety minutes. Another plan is 4:4 Block which is four classes that meet every day for half a year for seventy-five to ninety minutes. Unique Block plans are a blend of the Traditional and the other Block plans and often classified as a modified block. Examples include Quarter, Copernican, and 2x2x2x2 (Canady & Rettig, 1995).

has led to meaningful teaching innovations that have resulted in higher student achievement (Center for Education Reform, 1996). This conclusion is particularly disturbing considering that increased lab and discussion time in science classes is an advantage claimed for Block scheduling (Canady & Rettig, 1995; Pettus & Blosser, 2001). In response, Veal (2000) studied three questions: does the switch to a Block schedule alter the teachers' instructional methods; does it change the modes and increase the efficacy of teaching and learning; and does student achievement increase due to Block scheduling? He discovered that while teachers reported some of the benefits addressed in the research literature on Block scheduling, they also reported challenges, tradeoffs, and obstacles to improving their classroom practices. Most of the published research within the past ten years is grounded in teacher and student perceptions of Block scheduling culled from surveys and interviews (Nichols, 2000). The major outcomes from these descriptive studies are opinions on classroom climate (e.g., student-teacher relationships, discipline problems), instructional approaches, student development, and satisfaction with Block scheduling (Lewis, Winokur, Cobb, Gliner & Schmidt, 2005). In addition, the existing literature often cited continued use of instructional practices better suited for Traditional schedules and disuse of instructional practices better suited to Block-type schedules as reasons why Block-type scheduling plans have not produced improvement in student achievement (Hackmann & Schmitt, 1997). Among these instructional practices are student-centered activities such as labs and peer tutoring (Pettus & Blosser, 2001; Hackmann & Schmitt, 1997; Thomas, 2001). Other important questions also arise. Do variations in the frequency of particular teaching formats exist across schedules? Are students in Block better prepared for future academic achievement than their peers in Traditional schedules? Some studies have offered responses (Knight, DeLeon, & Smith, 1999; Lawrence & McPherson, 2000). However, recent national expectations have created considerations beyond high school achievement. Most notable is college preparation.

As of October 2004, 66.7 percent of high school graduates from the class of 2004 were enrolled in colleges or universities (United States Department of Labor, July 2005), representing a steady increase over previous years. The role of high schools as a means to prepare students for a successful college experience has grown in importance. This study focuses specifically on science coursework and achievement, and addresses the following research questions:

- 1) Do students who participated in a Block science class report instructional practices at frequencies different from their counterparts in Traditional classes?
- 2) Controlling for secondary science achievement and differences in backgrounds, is introductory college science performance associated with students' reported participation in high school scheduling plans? Are interactive associations between scheduling plans and instructional practice associated with introductory college science performance?

Methods

An Introduction to the FICSS Project

Many high school science teachers consider preparation for college science as a major objective in their courses (Hoffer, Quinn, & Suter, 1996). With this concept in mind, Factors Influencing College Science Success (Project FICSS), a 4-year study funded through the Interagency Educational Research Initiative and the National Science Foundation (NSF-REC 0115649) collected an array of data from introductory college students that included surveys and introductory course based on a large-scale pilot study (Author, 2001).

Project FICSS collected survey data from 128 different first semester introductory college biology, chemistry, and physics courses. These courses were taught at 55 4-year US colleges and universities (36 public and 19 private) from 33 different states during the fall 2002 and 2003 semesters. The participating schools are a subset of 67 selected through stratified random sampling based on school size from a compre-

hensive list of schools.² Faculty in the science departments asked to participate in the survey, and 29 biology departments, 31 chemistry departments, and 37 physics departments agreed. We compared participating and non-participating schools across measures such as school size, admissions selectivity, and geographic location and no indications that self-selection bias was an issue. The student enrollments ranged from small liberal arts colleges to large state universities.

For the sake of comparability, only courses with large lecture-based classes, smaller recitation/tutorial sections, and separate laboratory sessions were included in this study. This format is by far the most common and thus, most likely to be experienced by introductory science students. Some institutions have chosen to alter this familiar format by employing small classes with closely associated laboratories (Kummings, Marx, Thornton, & Kuhl, 1999). Courses of this type were not included in the survey sample.

Surveys were administered during class meetings which helped to provide a contextualized environment for students. Research indicates contextualization is important in promoting the accuracy of survey responses (Niemi & Smith, 2003; Kuncel, Credé, & Thomas, 2005). Later, college professors entered the students' final course grades on the surveys before returning them to the researchers. As part of the survey protocol, student identification was physically removed from the survey forms and destroyed after grades had been matched. Questions at the end of the survey asked students to volunteer contact information and approximately 50 percent of the students provided email addresses and gave their permission to be contacted. The sample totals are: 2754 biology surveys, 3521 chemistry surveys, and 1903 physics surveys.³

² Approximately 60 percent of students in higher education settings attend 4-year colleges and universities. The balance attended 2-year institutions (i.e. junior colleges, community colleges). (United States Department of Labor, July 2005)

³ A total of 2647 physics surveys were collected. However, 744 college physics students reported not having taken high school physics (28.1 percent). These students were not included in the analysis. Non-enrollment in high school biology and chemistry were also accounted for.

Based on these sample sizes, statistical power analysis suggests that this study has a greater than 90 percent chance of detecting a small effect with a correlation of 0.20 (Light, Singer, & Willett, 1990, p. 201).

The survey administration format employed several characteristics that research has identified as important to enhancing accuracy in the data collection and survey design.⁴ With these survey enhancements, research using self-reports can be reasonably accurate, especially in surveys of college students (Kuncel, Credé, & Thomas, 2005). The reliability of the survey instruments were analyzed through a separate test-retest study involving 113 introductory college chemistry students who completed the survey on two separate occasions, two weeks apart. The study produced reliability coefficients ranging from 0.46 to 0.69. The survey reliability was acceptable in light of research citing that the likelihood of a reversal in the direction of difference for a reliability coefficient of 0.40 for 100 individuals is 0.7 percent (Thorndike, 1997). The primary reason for such strong reliability is analyses of trends for large groups rather than single individuals. This study analyzed trends in large numbers of students and while individual-level variation may occur, overall trends in large samples have been shown to be very stable.

In addition, to accuracy and reliability, an additional benefit of large-scale studies is the potential for generalizability of outcomes. This study surveyed thousands of students from over a hundred college science courses at colleges including historically black colleges and universities and women's colleges. The breadth of the survey offers such potential.

Missing data is a common problem in survey research. In most cases, list-wise deletion is used, raising concerns of sample biasing. Recent studies have suggested that data imputa-

⁴ These factors included: 1) proper wording of questions, 2) grouping questions into conceptually related sequences, 3) providing contextual cues within the questionnaire, 4) surveying students in situations and surroundings associated with the topic (such as classrooms and lecture halls during science classes), and 5) making the survey relevant to the students (Niemi & Smith, 2003).

tion is an effective means of handling this issue (Peugh & Enders, 2004). In this analysis, we used data imputation for missing background data (i.e. control variables), while not imputing data for the variables that were the focus of this study. We used the expectation-maximization (EM) algorithm (Allison, 2002; Little & Rubin, 2002), which has been found to be highly effective in statistical simulation studies (Scheffer, 2002).

The data analysis consists of two parts: a descriptive analysis of frequency distributions across various teaching methods and a multiple linear regression analysis controlling for college effects. The descriptive analysis displays a series of tables comparing the frequencies reported by college science students about their high school science experiences in the class corresponding to the college course they were enrolled in. The regression analysis contained several control predictors included to account for differences at the college course level and at the individual student level. These control predictors included a dummy variable set representing each college course included in the analysis to account for variance associated with each college course. This approach is highly effective in accounting for differences at the college course level (Pike & Saupe, 2002). Controls were also included to account for students' demographic backgrounds: highest parental educational level, gender, racial ethnic background, and per capita county income. Other controls included students' general educational background: AP science enrollment; high school calculus enrollment; last high school grade in science, mathematics, and English; and SAT-Quantitative and Verbal scores. The scheduling plan predictors were included in the analysis as categorical variables. Using this approach, one predictor is held out of the model to act as a basis of comparison (a baseline). In this analysis, Traditional scheduling plan was used as the baseline.

Results and Discussion

The first research question looked for variations in teaching methods across different scheduling

plans. For this analysis, we compared the following measures of instructional methodologies in high school science: 1) number of student-designed projects; 2) number of demonstrations per week; 3) frequency of lectures, 4) whole class discussions, 5) small group activities, 6) individual work, 7) peer tutoring, and 8) community projects; and 9) number of labs per month. The instructional practices were compared for frequency of usage under each type of scheduling plan.

Of 8178 surveys collected, 600 were not analyzed because of non-response or multiple responses to questions used to identify scheduling plans. These surveys were not found to be clustered within the sample. One important artifact of comparing AB Block to the other scheduling plans arose from an overlap in the "2 - 3 times per week" and "everyday" response categories. In fact, these two categories may be considered to be the same since AB Block classes only meet 2 - 3times each week. We noted this artifact in our analysis of the frequency data and summed percentages in these two categories when comparing AB Block frequencies to the other scheduling plans. Apart from lecture, the frequencies of teaching methods reported by students in Traditional and AB Block scheduling plans are strikingly similar. The 4:4 scheduling plan also showed similar patterns, with somewhat higher frequencies for lecture, small group work, and individual work. Scheduling plans not falling into these three categories were placed in the Unique Block category, and as a result, it was not surprising to find that the frequencies of particular methodologies appear at times to differ from the other scheduling plans. However, on the whole, the frequencies are very similar here as well. It is useful to include the Unique Block category in the analysis as an option for comparison; however, conclusions regarding this category are not robust given the diversity of scheduling plan structures. Exemplary results are shown in Tables 1a - 1c.⁵

⁵ The tables comparing the other seven measures of instructional practice in high school science are available upon request from the corresponding author.

Scheduling Plan	Number of Labs/Month (Percentage)							Sample Size
	No Labs	1 Lab	2 Labs	3 Labs	4 Labs	5 Labs	6 + Labs	
Traditional Plan	8	20	25	16	19	5	6	4115
AB Block	7	19	25	19	19	5	6	1500
4:4 Block	11	16	23	19	19	5	7	1642
Unique Block	13	11	21	20	26	3	6	446
Overall	9	19	25	17	19	5	6	7703

Table 1a: Number of labs per month by HS scheduling plan

Scheduling Plan	Frequency of Lectures (Percentage)					Sample Size
	Very Rarely	Once /Month	Once /Week	2-3 /Week	Everyday	
Traditional Plan	2	2	4	19	73	4062
AB Block	2	2	7	31*	58*	1467
4:4 Block	3	2	4	19	71	1613
Unique Block	5	5	9	29	51	434
Overall	3	2	5	22	68	7576

* Please note that AB Block scheduling plans call for students to meet in their respective classes only 2 to 3 times each week. Therefore, the choices 2-3/Week and Everyday are equivalent

Table 1b: Frequency of lectures by HS scheduling plan

Scheduling Plan	Frequency of Peer Tutoring (Percentage)					Sample Size
	Very Rarely	Once /Month	Once /Week	2-3 /Week	Everyday	
Traditional Plan	52	22	13	8	6	4031
AB Block	52	21	14	9*	5*	1457
4:4 Block	53	21	12	8	6	1600
Unique Block	53	18	16	8	6	429
Overall	52	21	13	8	5	7517

*The choices 2-3/Week and Everyday are equivalent in AB Block.

Table 1c: Frequency of peer tutoring by HS scheduling plan

The second research question investigates the existence of a connection between high school scheduling plans and college performance while accounting for differences in student backgrounds and academic achievement. The question also called for analyses accounting for interactive associations between scheduling

plans and instructional practices. The regression model is shown in Table 2. The results show that the scheduling plan categorical predictors do contribute to the explained variance in the model, with the overall model accounting for 31.1 % of the variance (29.8 % adjusted) in the outcome, final college science grades. The

standardized β -values indicate that the scheduling plans are weak predictors of college success with values of 0.02 and 0.04 for 4:4 and Unique Block, respectively, compared to values of 0.18 for Last HS Mathematics grade and 0.20 for SAT-Quantitative score. The results for AB Block students reveal interactive associations with students' Last HS Science Grade and Peer Tutoring, with standardized β -values of 0.14 and -0.04 indicating that the interaction with Last HS Science is relatively strong. The model also reveals a single significant interactive association between peer tutoring and AB Block students. No other significant ($\alpha = 0.05$) interactive associations between scheduling plan and instructional practice were found.

The interpretation of regression models, though initially very technical, may be reduced to the calculation of the solution of a simple linear

equation where the solution is the predicted final college grades for a prototypical student. In this linear equation, the predictors are the independent variables, and the coefficients are the parameter estimates listed in Table 2, column B. Figures 1 and 2 show predicted college grades calculated from the regression model. Figure 1 compares differences in predicted college grades for prototypical students with differing high school science grades across the four scheduling plans. For Traditional, 4:4 Block, and Unique Block plans, the findings all show similar trends, with 4:4 and Unique Block plan participants associated with grades incrementally lower, -0.81 and -1.98, respectively, than Traditional; however, AB Block interaction offers a different outcome. Here, a clear interactive association exists between Last HS Science Grade and AB Block scheduling plan. Higher achieving students appear to be associated with

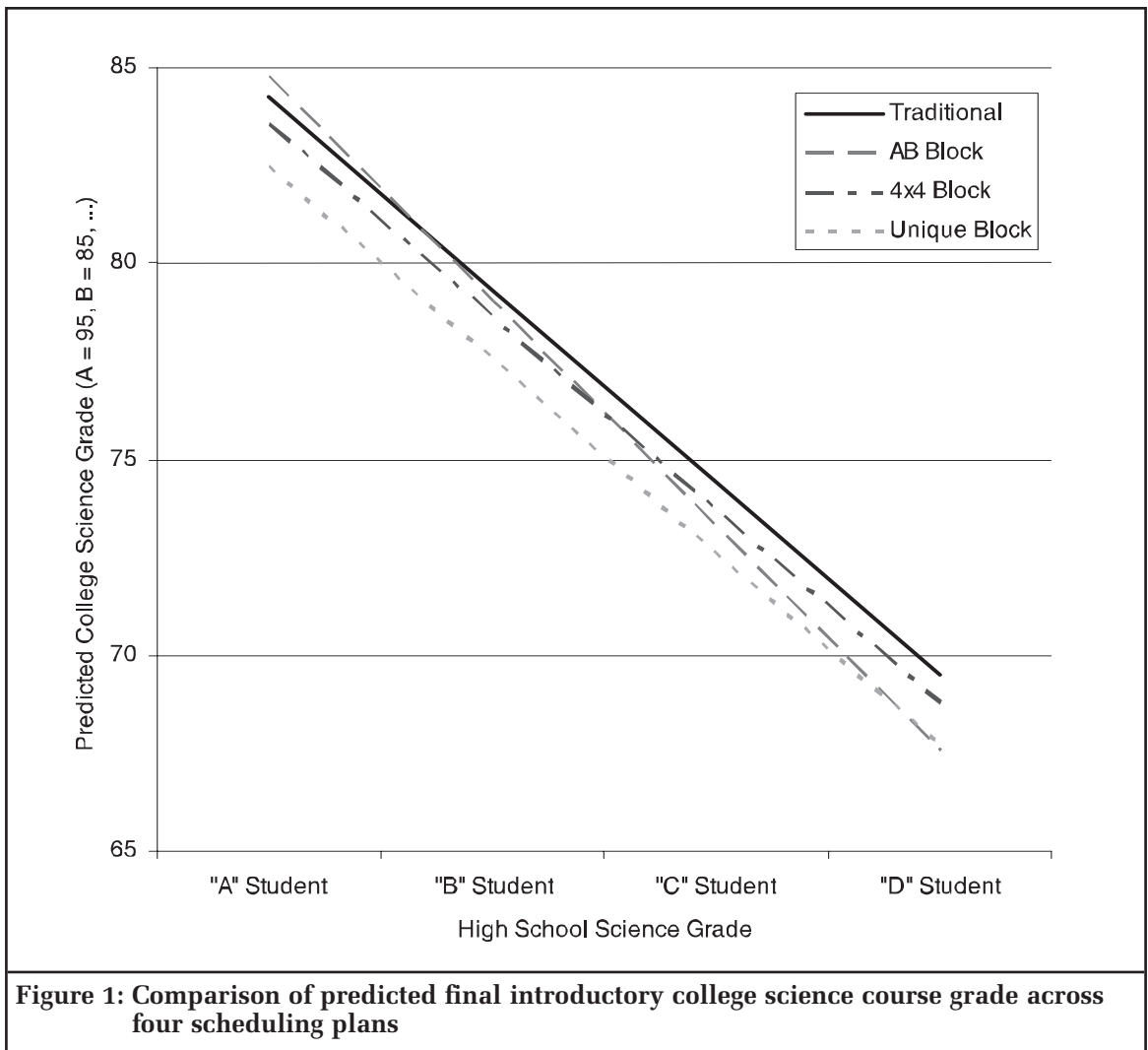
Predictors	B		s.e.	β
Constant	37.93	***	1.25	
College Effects		Included		
Highest Parent Education Level	0.58	***	0.11	0.06
SAT Quantitative	0.02	***	0.00	0.19
SAT Verbal	0.01	***	0.00	0.09
Last HS Grade in ... Science	2.22	***	0.19	0.14
Mathematics	2.87	***	0.17	0.19
Participated in Peer Tutoring	0.23	*	0.10	0.02
AB Block	-3.26	*	1.82	-0.11
4:4 Block	-0.81	*	0.30	-0.03
Unique Block	-1.98	***	0.51	-0.04
Interaction				
Last HS Science Grade x AB Block	0.92	*	0.40	0.14
Interaction				
Peer Tutoring x AB Block	-0.48	*	0.24	-0.04
Dependent Variable: Final Introductory College Science Grade (A+ = 98, A = 95, A- = 91, B+ = 88, etc)				
R ² = 0.311; Adjusted R ² = 0.298; Sample size, N = 7427				
*** p < 0.001, ** p < 0.01, * p < 0.05				

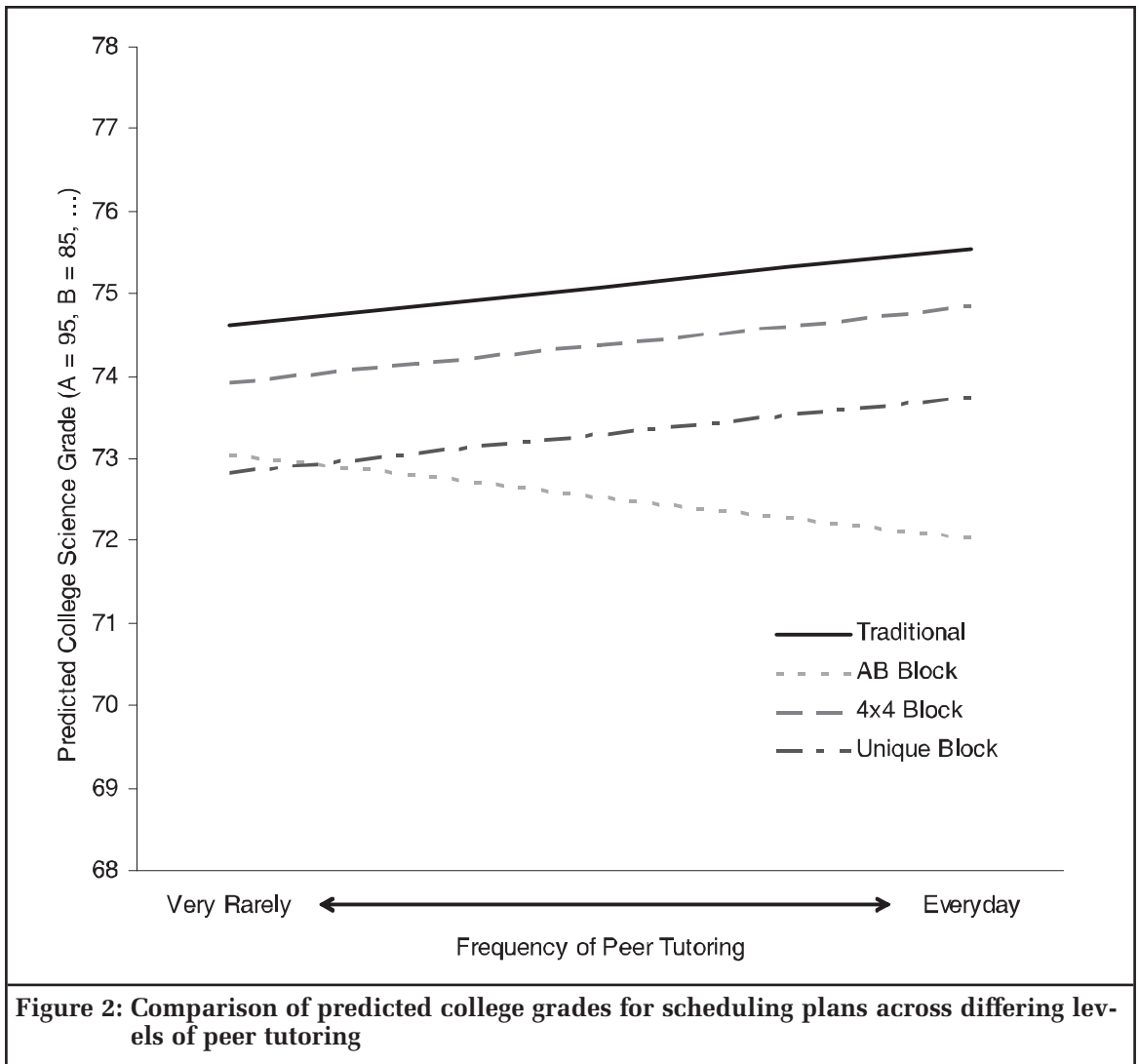
Table 2: Multiple linear regression model of scheduling plan predictors accounting for student backgrounds and college effects

higher college science grades than students in all other schedule plans, though not by a large margin; however, lower achieving AB Block students were predicted to earn lower grades than the Traditional and 4:4 Block plans. Further research to corroborate such an interaction is necessary before implications may be considered robust (Tobias, 1981), but this result does raise issues about the efficacy of AB Block in raising the achievement of low achievers.

Overall, no more than a three-point difference separates the predicted college science grades among the four scheduling plans within each level of science achievement. That means for an

“A” student in any plan, his predicted score is within 3 points of all the other predicted scores, in fact the largest difference among the predicted values is only 2.30 points. Very little variation was found, but what variation there is suggests that students on the Traditional scheduling plan are predicted to earn higher grades across all prototypical backgrounds with the only exception for the AB Block schedule prototypical “A” student. For these students, the difference is only predicted to be a 0.5-point advantage for the AB Block schedule. The advantages promised by Block scheduling plans do not appear in this analysis.





Next, we consider differences in college performance across differences in frequency of peer tutoring, the lone significant interactive instructional practice. Figure 2 shows the predicted grades for prototypical students with peer tutoring experiences ranging from Very Rarely to Everyday across the four scheduling plans. The results show that the predicted grades are positively associated with more frequent levels of peer tutoring while the interaction between peer tutoring and AB Block shows a negative association. This result suggests that students reporting higher levels of peer tutoring and who reported having AB Block scheduling plans were predicted to earn lower college sci-

ence grades, while for the other three scheduling plans the reverse was true. However, students reporting Traditional scheduling plans earned slightly higher grades overall. Note that though the parameter estimates are significant at the $\alpha = 0.05$ level, the predicted grade differences are relatively small, with the largest difference at 3.5 points or about 1/3 of a letter grade. This is contrary to the statement made earlier that student-centered activities such as labs and peer tutoring are more time intensive pedagogies better suited to extended class times (Pettus & Blosser, 2001; Hackmann & Schmitt, 1997; Thomas, 2001)

Analyses fitting other interactions between scheduling plan and instructional practice did not produce any other significant predictors of college science grades (with $\alpha = 0.05$). This result suggests that differences in instructional practice across different scheduling plans are not associated with significant differences in college science performance. Thus it appears that students who report experiencing pedagogy using instructional techniques cited as better suited to extended class time do not appear to earn grades different from their peers in Traditional scheduling plans or even in Block plans not employing these pedagogies. This analysis does not find improvements in educational outcomes from the use of Block scheduling plans in terms of college preparation in science.

Conclusions

The first question this article set out to explore was: do the students who reported that they participated in a Block science class also report instructional methodologies at frequencies different from their counterparts in Traditional science classes? The analysis revealed that no major differences existed among the scheduling plans. In fact, the two most common scheduling plans, Traditional and AB Block were almost identical in terms of frequency of various instructional practices. This finding certainly supports the contention among Block proponents that teachers are not altering their teaching to best exploit the advantages of extended class time.

To address this issue, the second question investigated the associations between scheduling plan experiences and student predicted performance in their introductory college science courses controlling for differences in secondary science achievement and student backgrounds. In the initial analysis comparing student achievement across scheduling plans, the results showed no more than a three-point difference among the scheduling plans in terms of college science performance. This difference amounted to only about one third of a letter grade, with Traditional over 4:4, and both of those schedules over unique Block scheduling. AB Block students fared differently, producing

an interaction that suggested higher performing science students were advantaged in their college preparation while lower performing students were disadvantaged. To address the combined influence of instructional practice and scheduling plan, interactions between practice and plan were included in the regression analyses. The results yielded one significant relationship between peer tutoring and AB Block plan. This significant interaction indicated that all students in AB Block were at a disadvantage compared to their classmates in other scheduling plans with higher frequencies of peer tutoring associated with lower levels of college performance in science. This outcome means that AB Block students who reported greater frequency of peer tutoring were associated with lower college grades. On the other hand, for Traditional schedule students, greater frequencies of peer tutoring were associated with higher final college science grades. The differences in predicted final college grades was not great, amounting to no more than one third of a letter grade at their largest margin, no other interactive associations were found to be significant at the $\alpha = 0.05$ level.

Despite its relatively large scope, this study does have limitations. First, only students in introductory biology, chemistry, and physics courses were surveyed. Students who did not take introductory sciences courses were not polled. Second, the study only focused on those students who entered four-year colleges and not students enrolled in two-year colleges or technical schools. Third, this study did not account for how much experience students and teachers may have had with Block scheduling plans; though it should be noted that AB Block and 4:4 Block plans have been in use for nearly a decade. Most importantly, this analysis did not account for whether teachers received any in-service training to facilitate their transition to the Block scheduling. While the study design is not ideal, these findings do raise some important issues. Do Block scheduling plans take time to produce positive impacts? If so, how long? Is in-service professional development important? If so, what kind and how much? While several questions have been raised by this study, it appears that some questions have been

answered. In general, for schools considering college preparation in science as an important goal, Block scheduling plans do not appear to offer a better option than a Traditional plan. Might there be positive impacts in other disciplines? This study does not have the scope to address this question. A common argument used by Block proponents to answer criticisms of Block scheduling is that teachers are not applying the methodologies that are best suited to exploit the advantages of Block scheduling. The findings from an analysis of interactive associations between Block and instructional practices suggests that even in the cases where these “Block-advantaged” methods are being used at higher frequencies, student performance does not appear to differ much from Traditional scheduling plan outcomes. In fact, in the instance where a significant difference does occur, the Block scheduling plan was associated with lower college science performance.

Though the argument to eschew the Traditional schedules has clear intuitive appeal, might the alternative of Block plans be merely trading one Procrustean bed for another? *Prisoners of Time* pointed out class time as a possible culprit in apparent failures of public education. In reaction, school systems re-evaluated whether or not the time between the bells was adequate for educating their students. This re-evaluation of scheduling plans resulted in a variety of new scheduling plans (e.g. Canady & Rettig, 1996; Pettus & Blosser, 2001). Opinions formed, some arguing for shorter and more classes, while others argued for longer and fewer classes. Many school systems took the plunge into new territory and implemented scheduling changes using a trial and error approach. In retrospect, K-12 education may have become an even greater “prisoner of time” as a result. In the end, we may have lost sight of another important point brought out in quote that began this manuscript about, “everyone else – from the typical student to the dropout.” It is these students that “[run] into trouble” that the authors were most concerned about and it appears that based on the findings discussed in this study, Block scheduling does not appear to address the needs of “typical students.”

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