

## Analysis of School Bell Schedules and Graduation Credit Requirements

### INTRODUCTION

The State Board of Education staff has combined and analyzed two data sets in order to determine if there is a relationship between graduation credit requirements and bell schedules for Washington State high schools. The staff also used the data to examine the average number of hours of instruction per credit. The information regarding graduation credit requirements was collected by the Board's staff in 2007 as part of the Meaningful High School Diploma initiative. The information about bell schedules was collected by the Washington School Research Center as a part of a research project in 2006 by Duane Baker et al., entitled "Schedule Matters".

### RESULTS AND DISCUSSION

#### Credits and Bell Schedules

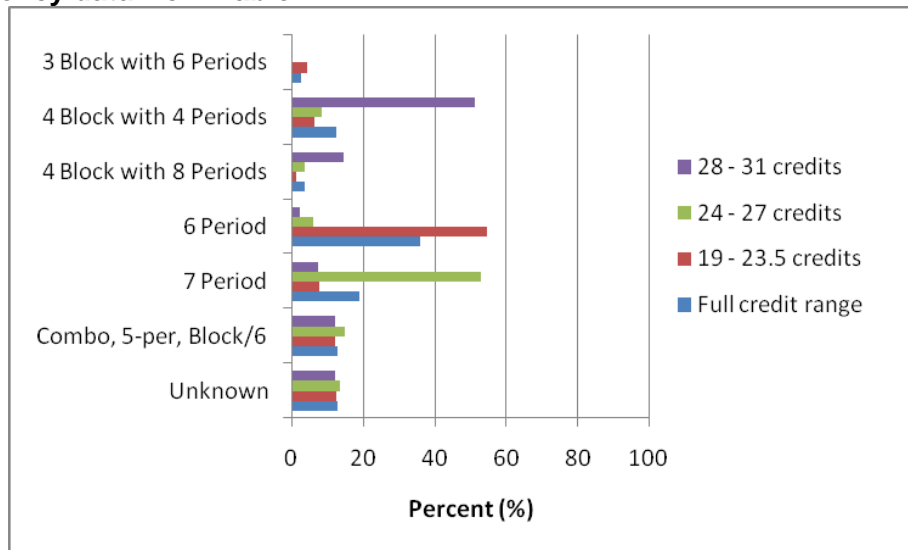
The analysis of the data from 284 high schools in 214 districts has revealed trends in the relationship between graduation credit requirements and bell schedules (Figure 1). The results show that schools with graduation requirements between 19 and 23.5 credits tended to use a 6 period bell schedule, schools with graduation requirements between 24 and 27 credits tended to use a 7 period bell schedule, and schools with graduation requirements between 28 and 31 credits tended to use a 4 period block (4 x 4). Table 1 and Figure 2 illustrate the relationship in percentages for all data and for some subsets of the data. This analysis used secondary data that was collected at different times, so further analysis is needed to better understand the relationship.

**Figure 1. Graph of bell schedule and graduation credit requirement data (excluding unknowns)**

**Table 1. Frequency of schedules in percent for all data and for ranges of credit requirements**

	Frequency data in Percent (%)			
	Total data Full credit range	Subset data 19 - 23.5 credits	Subset data 24 - 27 credits	Subset data 28 - 31 credits
3 Block with 6 Periods	2.8	4.4	0.0	0.0
4 Block with 4 Periods	12.6	6.4	8.6	51.2
4 Block with 8 Periods	3.7	1.5	3.7	14.6
6 Period	36.2	54.9	6.2	2.4
7 Period	19.0	7.8	53.1	7.3
Combo, 5-per, Block/6	12.9	12.3	14.8	12.2
Unknown	12.9	12.7	13.6	12.2
Total Percent	100	100	100	100
			= highest percentage for each group	

**Figure 2. Graph of bell schedules for selected ranges of credit requirements using percent frequency data from Table 1.**



**Hours of Instruction per Credit**

The analysis of the approximate number of minutes per period used data from 240 schools in 187 districts and it revealed a range of 135 hours to 165 hours of instruction per credit. These values should be considered examples of what the total instruction hours might be for schools with these bell schedules. Some of the results derived in this exercise do not meet the Washington State Board of Education’s minimum requirement of 150 hours of instruction to earn a credit (WAC 180-51-050). The Office of Superintendent of Public Schools can provide waivers from this requirement, when appropriate. Twenty-three school districts have been granted waivers for the 2008-9 school year.

**Table 2. Approximate minutes per period for certain schedules**

Bell Schedule	Minimum minutes per period	Maximum minutes per period	Median (middle value) minutes per period	Instructional hours per credit calculated from Median
3 Block with 6 Periods	100	105	102	153
4 Block with 4 Periods	80	90	90	135
4 Block with 8 Periods	90	96	90	135
6 Period	42	90	55	165
7 Period	42	53	50	150
				Calculation assumed 180 days of school per year

**NOTES**

For this secondary data analysis, the Board’s staff utilized Microsoft Access, Microsoft Excel, and Statistical Program for the Social Sciences (SPSS). The bell schedule data was kept in the original 6 categories: 3 Block with 6 Periods; 4 Block with 4 Periods; 4 Block with 8 Periods; 6 Periods; 7 Periods; and Combo, 5-per, Block/6. Some of the values within the “approximate minutes per period” fields could not be used because they expressed ranges or contained notes about the schedule variety. The “Combo, 5-per, Block/6” data was not used in the calculation of the average number of hours of instruction per credit because the data were too wide-ranging.

**REFERENCES**

1. Baker, Duane; Joireman, Jeff; Clay, Joan; and Abbott, Martin. 2006. Research Report #9: “Schedule Matters, the Relationship between High School Schedules and Student Academic Achievement”. Washington School Research Center, Seattle, WA.
2. Washington State District Graduation Requirements Database 2007. The Washington State Board of Education: <http://www.sbe.wa.gov/HighSchoolGraduationRequirementsDatabase.htm>