Economic Impact Analysis
Virginia Department of Planning and Budget

8 VAC 20-520 – Regulations Governing Reduction of State Aid When Length of School Term Below 180 Teaching Days or 990 Teaching Hours
Department of Education
October 14, 2005

The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with Section 2.2-4007.H of the Administrative Process Act and Executive Order Number 21 (02). Section 2.2-4007.H requires that such economic impact analyses include, but need not be limited to, the projected number of businesses or other entities to whom the regulation would apply, the identity of any localities and types of businesses or other entities particularly affected, the projected number of persons and employment positions to be affected, the projected costs to affected businesses or entities to implement or comply with the regulation, and the impact on the use and value of private property. The analysis presented below represents DPB's best estimate of these economic impacts.

Summary of the Proposed Regulation

The Board of Education (board) proposes to amend these regulations to reflect the current Section § 22.1-98 of the Code of Virginia. Significant changes include: 1) permitting school divisions to make up missed days by extending the length of the teaching day, and 2) amending language concerning under which circumstances school divisions may apply to waive the 180-day school term requirement.

Estimated Economic Impact

The current regulations explicitly prohibit schools from making up the first 15 teaching days lost by extending the length of the school day. Pursuant to Senate Bill 452 and House Bill 1256 of the 2005 Virginia Acts of the Assembly, the board proposes to specify that schools may make up all missed days by extending the length of the teaching day, as well as by adding teaching days to the school calendar. Articles in the Harvard Graduate School of Education's

Ed. Magazine and the Washington Post cite anecdotal evidence that students benefit significantly from longer school days.[1] But no known research focuses on a comparison of student learning in extending teaching days versus additional teaching days. Although this issue is not its central focus, Kenny (1982) does produce some empirical evidence on the returns to student learning from extending the length of the teaching day versus adding teaching days to the school calendar. Kenny's regression results indicate that for all tested categories other than science, including verbal, mathematics, reading comprehension and social science, average student test performance improves substantially less with extended teaching days than with additional teaching days. See the Appendix for more detail. This is consistent with the idea that students may be tired late in the day and less able to focus and learn. Thus based on this study, it appears that for most subjects students learn more when teaching days are added rather than extended.

Some school districts will of course welcome the additional option to make up missed days by extending the length of the teaching day. Staff commitments and facility availability may at times make it very difficult to add school days. School districts may not be able to provide 990 teaching hours without the option to extend the length of the school day. While student learning appears to be greater with additional teaching days than with extended teaching days, student learning does appear to increase with extended teaching days.[2] Thus, if school districts cannot add additional teaching days, extending the teaching day will be more beneficial than doing neither.

The current regulations specify that school divisions which are forced to close more than 15 days during the school term because of severe weather, energy shortages, or power failure may apply to the board for a waiver of the 180-day requirement. The school division must present evidence that every reasonable effort has been made to reschedule as many days as possible. Before approving a waiver, the state board must be satisfied that the lost time cannot be made up.

The board proposes to replace this language with new language specifying that it may waive the requirement that school divisions provide additional teaching days or teaching hours to compensate for closings resulting from a declared state of emergency. The current language

[1] Sources: Tuttle (2005) and Mathews (2005).
[2] Kenny (1982) indicates that additional minutes in the school day do add to student cognition. This supports the anecdotal evidence from Tuttle (2005) and Mathews (2005).

listing severe weather, energy shortages, or power failure as allowable causes for school closing and waiver application is eliminated. In practice, there will likely be some occasions where severe weather, energy shortages, or power failure occur and schools are closed, but a state of emergency is not declared. Thus, the proposed change in language may result in fewer waivers applied for and granted. If the affected school districts truly cannot or otherwise choose to not add teaching days or extend teaching hours to compensate for the closings, than the affected districts will lose funding pursuant to these regulations. If the affected districts can actually make up the teaching time through perhaps some additional expenditure, this proposed change in waiver eligibility may result in some schools adding teaching time who would have obtained a waiver and not added the teaching time under the current regulations. To the extent that this occurs, this proposed amendment may result in some additional student learning.

Businesses and Entities Affected

The proposed amendments affect the 132 school divisions in the Commonwealth.

Localities Particularly Affected

The proposed amendments affect all Virginia localities. Those localities particularly prone to severe weather conditions are particularly affected.

Projected Impact on Employment

The proposed amendments do not significantly affect employment.

Effects on the Use and Value of Private Property

The proposed amendments do not significantly affect the use and value of private property.

Small Businesses: Costs and Other Effects

The proposed amendments do not significantly affect small businesses.

Small Businesses: Alternative Method that Minimizes Adverse Impact

The proposed amendments do not significantly affect small businesses.

References

Kenny L W, "Economies of Scale in Schooling," *Economics of Education Review*, Vol. 2, no. 1, Winter 1982.

Mathews J, "Let's Have a Nine-Hour School Day," The Washington Post, August 16, 2005.

Tuttle K, "What's Wrong with a Six-Hour School Day?" Ed. Magazine, Harvard Graduate School of Education, Summer 2005.

Appendix

Using a dataset that included a random sample of 4,300 twelfth grade males across the United States in 1960, Kenny (1982) performs seven regressions with test scores in seven different categories as the dependent variable and numerous independent variables, including number of days in the school year (#DAYS-in-YR) and number of minutes the student spends in class per school day (#MIN-in-DAY). The seven dependent variable test score categories are described below:

VERBAL:	knowledge of literature, spelling, vocabulary, capitalization, punctuation, English usage, and effective expression
MATH:	skills in arithmetic, algebra, geometry, trigonometry, and calculus
TECH:	information on various pure and applied areas of science
READCM:	reading comprehension
HOMEEC:	information on cooking, sewing, child care, etc.
SOCSCI:	knowledge of social sciences, civics, and current affairs
CREAT:	the ability to find ingenious solutions

Each regression included the same independent variables. See Kenny (1982) for the full list. Table 1 below shows the coefficient estimates for number of days in the school year (#DAYS-in-YR) and number of minutes the student spends in class per school day (#MIN-in-DAY) for each of the seven regressions.

Table 1

	Verbal	Math	Tech	ReadCm	HomeEc	SocSci	Creat
#DAYS-in-YR	0.108	0.173	0.0202	0.081	0.0019	0.068	0.022
#MIN-in-DAY	0.009	0.027	0.0189	0.001	0.0005	0.001	0.002

As indicated by the title of this regulation, the current Virginia standard for numbers of teaching days and teaching hours per year are 180 and 990, respectively. Dividing 990 by 180 results in a standard 5.5 hour teaching day. One extra teaching day would be equivalent to 330 additional teaching minutes using the Virginia standard since there are 330 minutes in 5.5 hours. Since the coefficients for #MIN-in-DAY can be interpreted as the effects of adding one minute to each teaching day, cumulatively that represents adding 180 teaching minutes using the Virginia standard of a 180-day school year. Thus, in order to make an apples-to-apples comparison of the effects of adding a teaching day on test scores to adding a time-equivalent extension of teaching minutes per day, the coefficients for #MIN-in-DAY need to be multiplied by 1.83 (330/180 = 1.83). In Table 2 below, the coefficients for #MIN-in-DAY have been multiplied by 1.83.

Table 2

	Verbal	Math	Tech	ReadCm	HomeEc	SocSci	Creat
#DAYS-in-YR	0.108	0.173	0.0202	0.081	0.0019	0.068	0.022
#MIN-in-DAY	0.0165	0.0495	0.0347	0.0018	0.0009	0.0018	0.0037

The results indicate that for all categories other than Tech, adding teaching days is more effective in increasing average student test scores than is extending existing teaching days.