

WISCONSIN STATE  
LEGISLATURE  
COMMITTEE HEARING  
RECORDS

2005-06

(session year)

Senate

(Assembly, Senate or Joint)

Committee on  
Education  
(SC-Ed)

File Naming Example:

Record of Comm. Proceedings ... RCP

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- 05hr\_AC-Ed\_RCP\_pt02

*Published Documents*

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1/31/06

## Comments on the Proposed Legislation to Conduct an Evaluation of the SAGE Program

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Value-Added Research Center  
Wisconsin Center for Education Research  
University of Wisconsin-Madison

The major features of the proposed evaluation study are as follows:

1. Evaluate the average effect of the SAGE program by comparing the average achievement of two groups: a sample of students who participated in the SAGE program, the SAGE *treatment* group sample; and a sample of students who did not participate in the SAGE program; the non-SAGE *control* (comparison) group sample.
2. Select the SAGE treatment group sample as a random sample of 500 students from the population of all students who attended SAGE schools. Select the non-SAGE control group sample as a random sample of 500 students from the population of all students who attended non-SAGE schools.
3. Evaluate the average effect of the SAGE program with respect to the following student outcomes:
  - a. Student achievement on the statewide assessments in grades three, four, eight, and ten;
  - b. Graduation from high school versus not completing high school.
4. Retain all students in the analysis, including students who transfer to different schools or districts.

### The Objectives of Program Evaluation

Educational program evaluations generally have one or more of the following major objectives:

1. Estimate the *average* causal (unbiased) effect of the program overall and possibly by student type (for example, high, medium, or low poverty) and school type (for example, rural/urban, large/small).
2. Estimate the variability and range in causal effects overall and possibly by student and school type. (This analysis allows us, for example, to identify programs that may be more effective on average than alternative programs or the status quo, but possibly less effective than status quo programs for some schools.)
3. Document (measure) the fidelity of program implementation and school instructional practices, inputs, resources, and policies that determine (or are associated with) educational productivity.
4. Identify "what works," the "production function" that identifies effectiveness of program components and other instructional practices, inputs, resources, and policies with respect to student achievement. This objective can be described as looking inside the "black box" of educational and program performance.

The proposed legislation focuses on the first of these evaluation objectives. Below, I present a discussion of scientifically-based methods of program evaluation and comments on the proposed legislation.

### Scientifically-Based Methods of Program Evaluation

The two major challenges of all program evaluations are to produce effect estimates that are statistically unbiased (valid) and statistically precise (reliable).

#### Valid (Unbiased) Program Effect Estimates

In order to obtain unbiased (valid) program effect estimates it is necessary to statistically control for (eliminate) differences in outcomes between treatment and control groups that are due to factors other than program effectiveness. In the present context, the primary threats to validity are (1) differences between the treatment and control groups due to (non-school) student factors such as parental education and income, educational attitudes, and participation in pre-school education and (2) differences between the treatment and control groups due to school factors unrelated to the SAGE program such as staff quality, curriculum, and other educational resources. These two potential sources of bias are referred to as student selection bias and school selection bias, respectively.

There are essentially three scientifically-based strategies for eliminating student and school selection bias: randomized control trials, statistical control models, and before and after models. The first approach, the randomized control trial (RCT), requires that program status – participation in the SAGE program versus nonparticipation in the SAGE program – be randomly assigned to schools. (Note that this is different from randomly selecting a sample of students from schools that have made their own decision about whether to participate in the SAGE program.) Given random assignment of program status, it is reasonable to expect that treatment and control schools will not differ with respect to student and school factors unrelated to the SAGE program. As a result, the average effect of the SAGE program can validly be estimated as the difference in average student outcomes between the treatment and control groups (the strategy suggested in the proposed legislation). The random assignment approach (also called a randomized control trial – RCT) has long been accepted as a “gold standard” for program evaluation. (See, for example, the U.S. Department of Education’s What Works Clearinghouse at <http://www.whatworks.ed.gov/reviewprocess/standards.html>.) Unfortunately, in order to use the random assignment approach to evaluate the SAGE program, it would be necessary to terminate participation in the SAGE program for some schools (randomly selected) who are currently participating in the program.

The second scientifically-based program evaluation approach is a quasi-experimental study in which a statistical model is used to control for student and school selection bias (the statistical control model). This approach is more demanding in terms of data collection than a randomized control trial since it is necessary to collect (1) information on student and family characteristics that are associated with student achievement and student achievement prior to program participation (that is, at the beginning of kindergarten or first grade) and (2) information on staff quality, curriculum, and other school characteristics unrelated to the SAGE program.

This data is used in a statistical model to, in effect, match SAGE and non-SAGE schools that are identical with respect to *observed* student and school characteristics. If the student and school control (matching) data used in the analysis is extensive (with kindergarten and first grade student achievement being one of the most important control variables), the program effect estimates obtained from the analysis will generally be regarded as meeting acceptable standards for scientifically-based research. Nonetheless, there is always the possibility that treatment and control schools could differ in ways that are not captured by observed student and school data.

One limitation of this approach is that it may not be feasible to evaluate program effects for schools, classified by student and school characteristics, where the rate of participation in the program is so high that it is not possible to construct a matching control group. In the case of the SAGE evaluation, for example, it may be impossible to use the statistical control model to evaluate the effectiveness of the SAGE program for high-poverty urban schools (since most such schools are probably participating in the SAGE program or in a related program, the P5 program). (A comparative evaluation of the SAGE and P5 programs might, of course, be very useful to policy makers.) It is likely that the only way to generate a suitable control group for high-poverty urban schools would be to terminate participation in the SAGE program for some of these schools. (Note: The evaluation approach described below can be used to evaluate the effectiveness of the SAGE program for high-poverty urban schools.) If it proves to be impossible to form suitable control group for high-poverty urban schools, this does not preclude the option of estimating the effectiveness of program components and other instructional practices, inputs, resources, and policies with respect to student achievement (evaluation objective #4 above).

The third scientifically-based program evaluation approach is a quasi-experimental study in which student outcome data from cohorts *before* implementation of SAGE and *after* implementation of SAGE is used to control for student and school selectivity (the before and after model). The idea behind this approach is that a positive program effect will show up as an increase in average student achievement immediately after a program is implemented as long as student and school factors unrelated to the SAGE program stay constant over the before and after periods. (In the generalized before and after model, it is only necessary that it is possible to predict student and school selectivity in the after period, given the pattern of selectivity observed during the before period.) The advantage of this approach over the statistical control model discussed above is that it controls for all constant (or predictable) sources of student and school selectivity across student cohorts even if these sources cannot be directly measured or are unknown. As a result, program effect estimates based on this method are generally regarded as more than meeting minimum standards for scientifically-based research. The disadvantage of this approach is that it can generally be used only once to evaluate a given program – at the point in time that the program is implemented.

Comments on the proposed legislation. The evaluation strategy in the proposed legislation does not meet the criteria for any of the three accepted evaluation approaches discussed above. The proposed approach, if modified in the following three ways, would meet the criteria for the statistical control model:

1. For one or more cohorts, administer assessments to students prior to participation in the SAGE program (that is, at the beginning of kindergarten or first grade) or collect test data from schools that are already assessing students in these grades. As a bonus, assess students

in the fall of second grade so that it is possible to evaluate the cumulative effects of the SAGE program at each grade level. In conjunction with the demographic data collected as part of the administered assessments and the new State WSLS/ISES data system, the pre-program test data will make it possible to control for student selectivity.

2. Design and administer a survey to collect school and classroom-level information on staff quality, curriculum, and other school characteristics. This data will make it possible to control for school selectivity. As a bonus, this information can also be used to investigate the school and classroom factors that are the sources of differences in classroom and school productivity with respect to student achievement (evaluation objectives #3 and #4 above).

As mentioned above, an important limitation of this evaluation approach is that it may be impossible to evaluate the effectiveness of the SAGE program for high-poverty urban schools without terminating participation in the program for some of these schools. Note, however, that the before and after model can be used to evaluate the effectiveness of the SAGE program for high-poverty urban schools, with the important caveat that the effect estimates pertain to the time period in which the SAGE program was first implemented in these schools.

#### Statistically Precise Program Effect Estimates

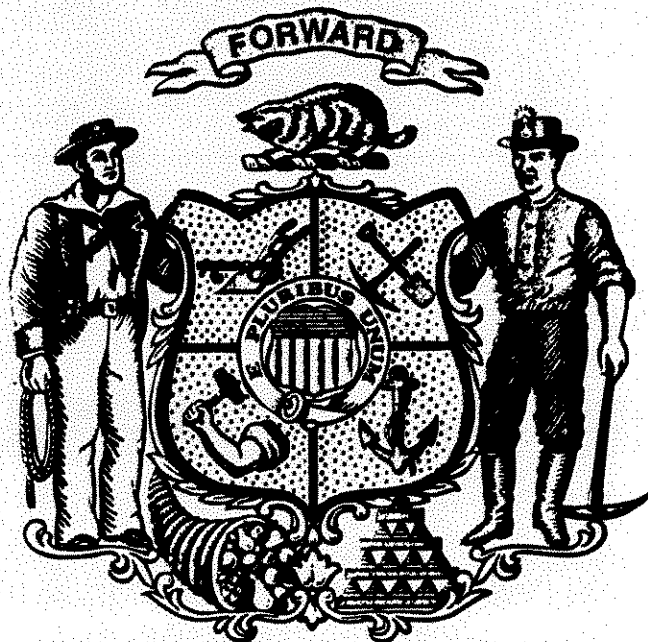
The statistical precision (reliability) of program effect estimates for all of the approaches discussed above depends on the degree to which student achievement is determined by student and school factors unrelated to the SAGE program. Based on previous studies of the determinants of school achievement, we know that the magnitude of these non-SAGE factors is large. As a result, in order to obtain precise program effect estimates, it is necessary to draw a sample of schools and students that is relatively large. The proposal to evaluate the SAGE program from the Wisconsin Center for Education Research (WCER) indicated that it would be desirable, based on preliminary calculations, to draw a sample of approximately 8000 students and 100 schools per cohort of students. Thus, the sample suggested in the proposed legislation – 500 treatment plus 500 control students – would probably be insufficient to produce reliable program effect estimates.

#### Other Comments

Parts #3 of the legislative proposal (as listed above) requires that the SAGE program be evaluated using student test scores from grades three, four, eight, and ten and whether or not a student graduates from high school. Part #4 requires that all students be followed and included in the outcome analyses, including students who transfer to different schools or districts. These are very reasonable requirements. In fact, it should be possible using the new State WSLS/ISES data system to evaluate the SAGE program using test scores at grades three to eight and ten since this data will be readily available in the State data warehouse. In addition, the Wisconsin Student Locator System (WSLS), implemented in 2005 should make it possible – for the first time – to track students across schools and districts. Finally, the WSLS/ISES data and the State data warehouse is being designed to record high school graduation status, so it should be straightforward to evaluate the SAGE program with respect to this outcome.

## Comments on the Ongoing SAGE Evaluation Being Conducted by the Wisconsin Center for Evaluation Research as it Related to the Proposed Legislation

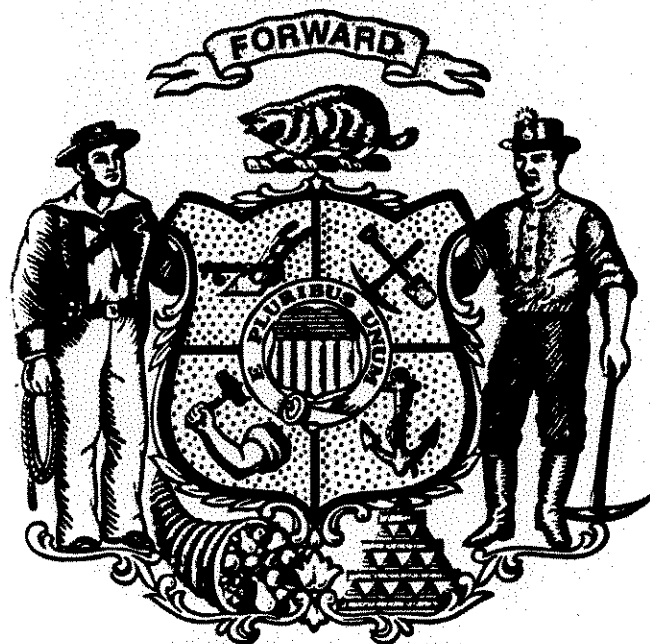
Two of the most important features of the proposed legislation are the objective of (1) estimating the average effectiveness of the SAGE program relative to non-SAGE schools and (2) estimating the effectiveness of the SAGE program with respect to both short term student outcomes such as third and fourth grade achievement and long term student outcomes such as eighth and tenth grade achievement and high school graduation status. The above analysis suggests that to accomplish the first objective for both high-poverty and other SAGE schools it probably is necessary to use two approaches: an ongoing longitudinal evaluation using a statistical control evaluation strategy and a before and after analysis (focused on the years just before and after the SAGE program was implemented). WCER's ongoing SAGE evaluation proposes to do exactly this. In fact, our proposal presents a framework for addressing all four of the evaluation objectives listed at the outset of this report. We would be happy to provide additional information on our proposed work and how it meets the objectives of the proposed legislation.

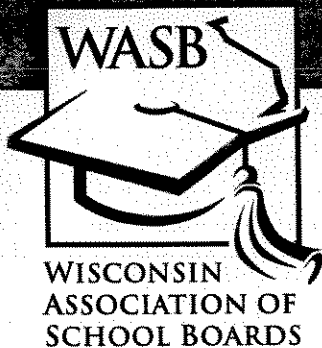


Talking points for SB 519  
SAGE Evaluation  
Senate Committee on Education  
February 7, 2006

- Thank you to committee
- Each year we spend close to ONE HUNDRED MILLION dollars on SAGE
- Current law directs DPI to arrange for an evaluation of SAGE and allocates \$250,000 EACH YEAR for its purpose.
- These evaluations are supposed to give legislators and other interested parties the information they need to prove that SAGE works.
- Unfortunately, the current studies are not giving us that information.
- In order to prove that SAGE is working, Rep. Towns and I have introduced this bill that will change the way the current study works.
- Once NCLB was put into place, there was a need to track student progress, hence the use of student identifiers.
- We would like DPI to track – using student identifiers - 500 individuals, 250 participating in SAGE, 250 not participating in SAGE, and follow their performance through high school graduation.
- It is our hope that this longitudinal study will give us the information we need to justify the program.
- We also cut the appropriation in half, from \$250,000 each year to \$250,000 for the biennium.
- Thank you for allowing me to testify.
- I will take any questions if you have any.







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JOHN ASHLEY, EXECUTIVE DIRECTOR

TO: Senate Education Committee  
 FROM: Sheri Krause, Legislative Services Director  
 DATE: February 7, 2006  
 RE: Summary of positions

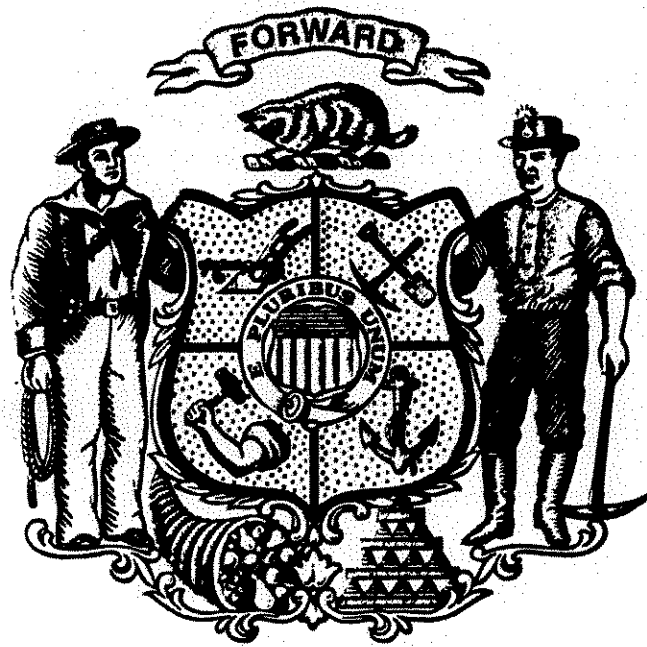
The Wisconsin Association of School Boards (WASB) strongly supports SB 519. The WASB will provide supplementary information on AB 700. Thank you for your consideration.

Bill	Description	Position
<u>AB 700</u>	Creates the Autism Scholarship Program and grants rule-making authority.	Opposes
<u>AB 114</u>	Allows school boards and charter schools to establish single-sex schools and courses.	Monitoring
<u>SB 482</u>	Adjusts the calculation of special adjustment aid and revenue limit when territory is detached to create a new school district.	Monitoring
<u>SB 519</u>	Requires an evaluation and longitudinal study of the SAGE Program.	Supports
<u>SB 520</u>	Requires school districts to report the number of hours of pupil instruction.	Monitoring

**EXEC SESSION**

Bill	Description	Position
<u>AB 84</u>	Provides flexibility on the number of school days required each school term, while maintaining the current hours of instruction required.	Supports*
<u>AB 84 Amend</u>	In addition to the current law minimum requirement of 1,137 hours of direct pupil instruction, requires that districts may not schedule less hours than they offered in 2005-06.	Opposes

\*The WASB only supports the original bill and will oppose the bill if amended.



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# WISCONSIN EDUCATION ASSOCIATION COUNCIL

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Affiliated with the National Education Association

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deserves a  
Great School!*

## MEMO

**TO:** Members of the Senate Committee on Education  
**FR:** Deb Sybell, Legislative Program Coordinator  
**DA:** February 7, 2006  
**RE:** Opposition to SB 519 (Revamped Evaluation of the SAGE Program)

The Wisconsin Education Association Council (WEAC) opposes SB 519 because 1) it proposes a revamped evaluation of the SAGE program that is inconsistent with scientifically-based methods of program evaluation and 2) the legislation slashes funding for the SAGE evaluation.

WEAC shares the concerns raised by the Wisconsin Center for Education Research (WCER) at the University of Wisconsin Madison. WCER questions whether the proposed modifications to the SAGE evaluation will statistically control (eliminate) differences in outcomes between treatment and control groups that are due to 1) *student factors* (such as parental education and income, educational attitudes, and participation in pre-school education) and 2) *school factors* unrelated to the SAGE program (such as staff quality, curriculum, and other educational resources). In addition, WCER indicates that the sample size suggested in the proposed legislation of 500 treatment plus 500 control students would probably be insufficient to produce reliable program effect estimates.

Furthermore, WEAC believes the objectives sought through this legislation can be met with the ongoing SAGE evaluation using the framework proposed by WCER. Under this framework, the SAGE evaluation will be able to estimate 1) the average effectiveness of the SAGE program relative to non-SAGE schools and 2) long-term student outcomes. WEAC also believes that the current annual allocation of \$250,000 should remain for the program evaluation rather than cutting it down to \$125,000 as proposed in the bill. ***If proponents of the legislation are interested in the accountability of the SAGE program, why shortchange the evaluation process by cutting funding in half and reinventing the evaluation framework in such a way that will yield unreliable results?***

Additionally, while the legislation looks to test scores to evaluate the SAGE program's effectiveness, SAGE is intended to do more than improve test scores on standardized paper and pencil achievement tests. SAGE also seeks to increase collaboration between schools and their communities, to promote professional support and development, and to improve the overall learning environment of each classroom and school.

For all of these reasons, WEAC urges you to oppose SB 519.

*If you have any questions, contact Deb Sybell, WEAC Legislative Program Coordinator, at (608) 298-2327.*

Stan Johnson, President  
Dan Burkhalter, Executive Director

