
A World In Motion®
Report Card



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*Increasing math and science literacy for
the workforce of the future*

SAE INTERNATIONAL

SAE International is the world's leading professional organization for mobility engineers. There are more than 120,000 members in over 90 countries. Members come from all branches of engineering, science and technology. SAE is dedicated to the advancement of the science and practice of mobility engineering through the creation and distribution of information and the expansion of professional skills.

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SAE International developed the A World In Motion® (AWIM) program 20 years ago to promote science and mathematics literacy among students in grades 4 through 10 by providing curriculum materials for authentic engineering design activities in the classroom.

In 2005, Goodman Research Group a research firm specializing in the evaluation of educational programs, materials, and services, was engaged by SAE to conduct a five-year, two-part multi-method evaluation to examine the long-term impact of the AWIM program on students and teachers.

The following are highlights of the findings.
The full report will be released in the near future.

Good job!

CONTENT RETENTION

AWIM challenge activities successfully teach students the specific content.

- ✓ **JetToy:** The number of students who explained accurately how nozzle size influences speed and distance increased from 1 in 33 at the beginning, to 1 in 5 at the end of the challenge.
- ✓ **Motorized Toy:** The number of students who correctly calculated the gear ratio in a compound gear train went from 1 out of 50 at the beginning, to 1 out of 2 at the end of the challenge.

KNOWLEDGE OF ENGINEERING

Students who used AWIM acquired and retained a strong knowledge of engineering.

- ✓ AWIM students demonstrated stronger understanding of engineers and engineering than did non-AWIM students immediately following completion of AWIM and for one, two, and three years later.

VOLUNTEER INVOLVEMENT

When an industry volunteer is involved with AWIM activities, students learn more.

- ✓ 7 out of 10 students reported they learned about what engineers do as a result of an industry volunteer's involvement in some AWIM activities.

TEACHER IMPACT

AWIM use has a cumulative positive impact for teachers.

- ✓ 8 out of 10 teachers who used AWIM at least once before felt *knowledgeable* and *comfortable* teaching physical science concepts, compared to 6 and 7 out of ten teachers who used AWIM for the first time.

STEM-RELATED EDUCATION

Students in the younger cohorts (in 5th and 7th grades when the study began) sought out more STEM-related experiences over time.

- ✓ On average, students who began in 5th grade, listed an average of 3 STEM courses 4 years later, compared to an average of 2 STEM courses taken by students who began in 8th grade.
- ✓ Two years after they used AWIM, twice as many students in the younger cohorts than the oldest cohort (in 8th grade when study began) listed a potential STEM-related college major.

To receive a copy of the complete report of the AWIM longitudinal study, please send an email to awim@sae.org and use the word "Study" in the subject line. Or if you'd like more detailed information, you can arrange a meeting with Matt Miller, Director, SAE Foundation, by phoning him at 724-772-7504.