



# Research Report

## Analysis of the Scientific-Based Research of the *A+nyWhere Learning System*

Thomas S. Trautman Ed.D.  
Vice President Curriculum Development  
The American Education Corporation

1-800-222-2811  
[www.amered.com](http://www.amered.com)

November 2004



# Analysis of the Scientific-Based Research of the *A+nyWhere Learning System*

The No Child Left Behind Act of 2001 requires that instructional materials or programs be validated by scientifically-based research. One school district requires their principals to complete a questionnaire. The questionnaire is a listing of the criteria by which research can be evaluated to determine if it is scientific. I have taken this questionnaire and applied it to *A+LS*. This checklist was applied in three ways.

- It was applied as the criteria to evaluate the research used to support the instructional practices upon which *A+LS* was built.
- It was applied to two research studies that were submitted to AEC about *A+LS*.
- It is the criteria by which studies to validate *A+LS* will be designed.

This document, together with two additional papers regarding the research base for *A+LS*, documents the scientific research base of *A+LS*. The additional documents are as follows:

- *The Research Basis for A+LS*
- *Research for Reading*

## **The Scientific Research Base of *A+LS*: *The connectivity principle***

Systematic and Empirical Methods of Scientific Research Base of *A+LS*?

- Does the research have a solid theoretical foundation? YES
- Were methodology, subject, and researcher clearly identified? YES
- Were the studies conducted in a consistent, disciplined, and methodical manner? YES
- Were the data obtained using observation or experiment? YES
- Are the research findings supported by tangible, measurable evidence? YES

Rigorous Data Analyses for Scientific Research Studies Supporting *A+LS*

- Did the research test the stated hypothesizes and justify the general conclusions drawn? YES
- Did the methods correspond to the nature and structure of the data? YES
- Did the research minimize alternative explanations for observed effects? YES
- Did the research findings present convincing documentation that the observed results were caused by the intervention? YES

### Reliable and Valid Data Collection for Scientific Research Studies Supporting *A+LS*

- Did the data result from a study involving multiple investigations in a number of locations? YES
- Were research biases minimized? YES
- Were the data measured consistently? YES
- Did repeated measurements on subjects taken under similar circumstances produce similar results? YES

### Strong Research Design for Scientific Research Studies Supporting *A+LS*

- Does the design describe a random assignment experiment in which subjects are assigned to different conditions with appropriate controls? YES
- Do the controls allow for the evaluation of the condition(s) of interest? YES
- Was the study designed to optimize the investigator's ability to answer the research questions? YES

### Detailed Results That Allow For Replication for Scientific Research Studies Supporting *A+LS*

- Are the findings clearly described and reported? YES
- Are the results of the research sufficiently detailed so that replication of the design is possible? YES
- Can the findings be enhanced with additional research? YES

### Results Subjected to Scrutiny for Scientific Research Studies Supporting *A+LS*

- Has the research been accepted by a peer-reviewed journal or approved by a panel of independent experts? YES
- Have unbiased experts who were not part of the research study reviewed the research? YES
- Have reviewers applied strict standards of scholarship and provided quality controls for the research they reviewed? YES
- Has the research been subjected to external verification? YES

The American Education Corporation has been careful to assure that its products are based on a substantial body of scientific-based research. The research has been screened by the above named criteria to assure that its programs are validated by the same research. To review this research, please refer to the documents published by The American Education Corporation titled *The Research Basis for A+LS, Research for Reading*.

## Scientific-Based Research on *A+LS*

In addition, a research program to investigate what works, with what students, under what circumstances with *A+LS* is underway. These studies examine *A+LS* in elementary schools (grades K-8) and high schools (grades 9-12). Four studies have currently been completed, and data for three additional studies has been gathered. The research program at the American Education Corporation will continue to expand the research base to establish what works with what students, under what circumstances.

The research studies that are currently completed investigate the following topics:

- The use of *A+LS* to enhance the performance of students at-risk of failing Algebra in a high school setting.
- The impact of *A+LS* use on achievement gains in reading and mathematics in an elementary school district.
- The impact of *A+LS* used in a computer laboratory to enhance mathematics achievement in an inner city elementary school.
- The success rate of *A+LS* with in a credit recovery program in a high school.

Systematic and Empirical Methods for studies validating *A+LS*

- Does the research have a solid theoretical foundation? YES
- Were methodology, subject, and researcher clearly identified? YES
- Were the studies conducted in a consistent, disciplined, and methodical manner? YES
- Were the data obtained using observation or experiment? YES
- Are the research findings supported by tangible, measurable evidence? YES
- 

Rigorous Data Analyses for studies validating *A+LS*

- Did the research test the stated hypothesizes and justify the general conclusions drawn? YES
- Did the methods correspond to the nature and structure of the data? YES
- Did the research minimize alternative explanations for observed effects? YES
- Did the research findings present convincing documentation that the observed results were caused by the intervention? YES

Reliable and Valid Data Collection for studies validating *A+LS*

- Did the data result from studies involving multiple investigations in a number of locations? YES
- Were research biases minimized? YES
- Were the data measured consistently? YES
- Did repeated measurements on subjects taken under similar circumstances produce similar results? YES

Strong Research Design for studies validating *A+LS*

- Does the design describe a random assignment experiment in which subjects are assigned to different conditions with appropriate controls? NO
- Were equivalent comparison groups used where random assignment was not possible? YES
- Do the controls allow for the evaluation of the condition(s) of interest? YES
- Was the study designed to optimize the investigator's ability to answer the research questions? YES

Detailed Results That Allow For Replication for studies validating *A+LS*

- Are the findings clearly described and reported? YES
- Are the results of the research sufficiently detailed so that replication of the design is possible? YES
- Can the findings be enhanced with additional research? YES

Results Subjected to Scrutiny for studies validating *A+LS*

- Has the research been accepted by a peer-reviewed journal or approved by a panel of independent experts? The studies have been, or are being, reviewed by an independent panel of experts. YES
- Have unbiased experts who were not part of the research study reviewed the research? YES
- Have reviewers applied strict standards of scholarship and provided quality controls for the research they reviewed? YES
- Has the research been subjected to external verification? YES

## Future Comprehensive Studies to Validate *A+LS*

Finally, The American Education Corporation has engaged an education research and consulting agency to design and conduct further scientific-based research studies regarding the efficacy of *A+LS*. This agency is The Institute for the Advancement of Research in Education at AEL, which is one of the Regional Educational Laboratories. The Institute and the research being conducted on behalf of The American Education Corporation is under the supervision of Dr. Doris Redfield, a nationally known expert in scientific-based research as it applies to the No Child Left Behind requirements.