

A+ssessment Technologies in the A+LS™ Software

A WHITE PAPER

The *A+nyWhere Learning System*® software provides extensive testing and assessment capabilities. "Assessment" is a word that is prominent today, and, unfortunately, is sometimes misunderstood. We thought it would be appropriate to outline the purpose and capabilities of assessment in the *A+LS* system, so that educators would have a clear understanding of what it is designed to do, and, as importantly, what it has not been designed to do.

"High stakes" tests are one reason assessments are used; they are used for purposes such as graduation, college entrance, special education, and determination of adequate yearly progress (AYP). Another purpose of assessment testing is for comparing a student to a group of other students. These tests are norm-referenced and report grade equivalents, percentiles, and standard scores. *A+LS* assessment testing is not designed for either of these purposes.

The *A+LS* system was designed for a third type of assessment, instructional planning. Most commercially-sold curricula such as reading and math come with placement tests. The tests are used to help make decisions such as the textbook in which the student should be placed, or the parts of the scope and sequence the student knows. This is the purpose of the assessment technologies in the *A+LS* software.

Tests designed to help with instructional planning are usually criterion-referenced. In a criterion-referenced test a student's performance is compared to criteria such as a description of a standard or capability. The results of criterion-referenced tests usually describe what students can and cannot do. This is in contrast to a norm-referenced test where a student's performance is compared to other students.

Assessment in the *A+LS* system is an integral part of the curriculum content. Once a test is taken, the program can create an assignment list specifically designed to meet the students' needs as identified by the assessment. This capability empowers the schools to provide differentiated instruction. It is the ultimate in flexible grouping because each student becomes a group of one.

A unique capability of the *A+LS* system is its ability to relate performance on its assessments to **state standards**. A record is maintained and reports can be generated that show which state standards a student has mastered in relation to *A+LS* instructional content.

Three forms of assessment are now available in the *A+nywhere Learning System* learning environment. These are course assessments, adaptive assessments, and tests within a lesson. The following provides a more in-depth understanding of each assessment type.

Course Assessment

Course Assessments provide a comprehensive evaluation of the knowledge and skills that are taught in an *A+nyWhere Learning System* title. They are located in special Course Assessment titles, by subject area. The titles are as follows:

- Course Assessments - Mathematics
- Course Assessments - Language Arts
- Course Assessments - Science
- Course Assessments - Social Studies

These assessments consist of test items in a form identical to that used in the instructional content that address the specific skills taught in the title. These assessments are criterion-referenced and can provide a prescription for students consisting of the lessons that address the skills for which mastery was not demonstrated on the Course Assessment. Two scores are provided with each

test. The first shows the percentage of questions answered correctly, while the second is a report of the skills for which the student showed mastery.

Each Course Assessment examines all the skills in a title. In most cases, the student is asked multiple questions per skill in order to avoid chance and guessing, so tests may seem long. Two strategies are employed to address this challenge:

- First, students are not required to complete an assessment in one sitting. The A+LS system will remember exactly where they left off and return them to the next unanswered question. It will also prevent students from changing answers to questions they have seen in a previous test session. With this capability, the software provides maximum flexibility in the assessment experience while maintaining the integrity of the assessment results.
- Second, some Course Assessments, most commonly in Science and Social Science, have been broken into sections. For example, there may be one Course Assessment that assesses skills related to life science and another that assesses earth science skills.

Course Assessments are also designed to be great tools for pretest/post-test comparisons. Two equivalent forms of each test ("A" and "B") are provided especially for this purpose. These comparisons may be of special interest when it is important to understand what a student knows before an instructional intervention begins and after it ends. Pretest/post-test comparisons are used to determine student growth and/or gains.

Finally, Course Assessments will not be the best method of assessment for all students. Some students require accommodations above and beyond extra time, taking the test in multiple sittings, or other creative ways of addressing students' needs. If this is the case in your situation, the Adaptive Assessment technology may meet your needs.

Adaptive Assessment

Adaptive Assessment is the second assessment technology used in the *A+nyWhere Learning System* learning environment. It generates tests "on the fly," selecting test items based on the skills that need to be tested. The skills included in the Adaptive Assessment are dependent on which skills the student masters during the test.

An Adaptive Assessment consists of a list of skills to be tested. The program automatically picks the test items to be presented. If a student demonstrates mastery of a skill, the A+LS system will test the student on the next most difficult skill. If the student does not demonstrate mastery of the skill, it will test the student on the skills that are prerequisite to the tested skill. This adaptive assessment technology can be used to find a student's abilities with minimal exposure to failure. The number of steps up or down that can be taken in one Adaptive Assessment can be controlled by the teacher. As with the Course Assessments, Adaptive Assessments can also automatically prescribe lessons for skills that the student has not demonstrated mastery.

There are a number of Adaptive Assessments that are pre-configured and delivered with each *A+nyWhere Learning System* installation. These are located in titles named "Adaptive Assessments," and the assessments located within each title are also Adaptive Assessments. As you consider using these assessments, please read the descriptions of the assessment so that you will understand what is being tested.

It is important to understand that these pre-configured assessments are provided as examples of A+LS Adaptive Assessment capability. The most important capability of the Adaptive Assessment technology is that teachers can readily use this technology to create assessments that address the specific needs of the students they are teaching. This includes creating assessments based on state standards. Also, when accommodations are needed to address individual student needs this is the tool to use. Creating an Adaptive Assessment in the A+LS system is as easy and quick as creating an assignment list.

Tests in Lessons

The third form of assessment in the *A+nyWhere Learning System* learning environment is the testing provided with each lesson. A bank of test items that is used for both the Practice and Mastery tests is provided with most lessons. These test items are used in four ways. These are:

- Practice tests
- Pretests
- Mastery tests
- Review tests

Each time a student takes a Pretest, Practice test or Mastery test, the *A+LS* testing engine selects ten (or in very rare cases, five or twenty) questions and provides a quiz. An additional capability allows teachers to create review tests. At any point in an assignment list, the teacher can instruct the program to give the student a test that will review all the skills taught in the previous lessons on the assignment list. This is an instructional technique to promote retention of what is learned and prevent students from racing through lessons, because they know they will be accountable on a review test.

Item Validity

The *A+nyWhere Learning System* software has an extensive bank of test questions in the three assessment technologies, and the validity of these items is important to their usefulness. The validity and validation process of test items in the system are explained in the following sections.

ITEM CONSTRUCTION

The author teams who write the instructional content of the *A+LS* system also write the test items. All items are written to directly evaluate the student's understanding of the instructional content presented in each lesson. The authors who write test items are certified teachers. They follow the form used by national achievement tests and the generally accepted guidelines of item construction.

Following initial item development, editorial staff reviews the test questions to ensure clarity of presentation, accuracy, and grammatical correctness. Upon completion of the editorial review, all test items are submitted to the Quality Assurance team.

VALIDITY

Two forms of validity are continuously examined for all test items in the *A+LS* system. These are face and construct validity. The examination of these forms of validity is part of the item development process described above. Each question is reviewed to determine that the question appears to test the concepts that are the focus of instruction.

Most important to the question of validity is the purpose for which the test items within the *A+LS* software were developed. The purpose is to evaluate a student's understanding of the content presented by the program. As such, the items represent a criterion-referenced test. As a criterion-referenced test, there have been no comparisons of performance on *A+LS* test items to external norm-referenced tests. Therefore, no statements can be made with regard to concurrent validity of the test items.

Conclusion

A final note, the purpose of the assessment technologies in the *A+LS* system is different from high stakes tests. High stakes tests are developed separate from content. The American Education Corporation provides a set of assessment technologies to examine students' understanding of the knowledge and skills presented in the *A+LS* instructional content and to relate this understanding to state standards. It is not intended to be a total testing solution. Instead, the *A+LS* instructional technologies are provided so that each school has a comprehensive set of tools to pinpoint instructional needs in the way that is best for their students. If we can help with your implementation of the *A+LS* assessment technologies, please feel free to contact Dr. Tom Trautman at 1-800-222-2811.

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