

White Paper

# Galileo® Formative Assessments

by  
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## I. Introduction

A Galileo® formative assessment is a short assessment that measures the achievement of one or more standards for the purpose of guiding instruction. Formative assessments may be administered at any time in class by the teacher. Formative assessments may also be scheduled for use with large groups of students. Formative assessment scores typically include the raw total points score and the percentage of points earned out of the total possible points. However, in some cases IRT scale scores may be provided. Some formative assessments are generated automatically to address specific user needs. Custom formative assessments may also be constructed by the user to assess knowledge and skills recently covered in the classroom setting. School-wide and district-wide formative assessments may be designed by the school or district using the *Assessment Planner* feature in Galileo and automatically generated for the school or district by ATI. The discussion that follows describes specific types of formative assessment available through Galileo's *comprehensive assessment system*.

## II. Galileo Formative Assessments

### A. User-Built Formative Tests

A Galileo user-built formative test is an assessment typically constructed by a teacher to assess specific knowledge and skills covered in classroom instruction. User-built formative assessments may be constructed using *Test Builder*, *Dialog Builder*, or *Automated Scoring Key (ASK)* technology. *Test Builder* is the procedure of choice when the teacher wishes to measure learning in a typical testing environment. *Dialog Builder* is particularly useful in those cases in which the teacher wishes to integrate assessment with instruction. For example, instructional content might be interspersed with formative test questions. *ASK* technology is used when a formative assessment is constructed outside of the Galileo *comprehensive assessment system*. For example, a teacher might build an assessment in a word processing program such as Microsoft Word. The assessment would then be printed for offline administration or displayed in Galileo for online testing.

### B. Practice Tests

A Galileo practice test is a formative assessment administered for the purpose of guiding instruction and providing experience in responding to varying instructional content and varying item types. Galileo practice tests are designed to be integrated with ongoing instruction. For example, a teacher may intersperse practice questions into an ongoing lesson. Practice tests have the advantage of providing a formative assessment score and, in addition, immediate feedback to the student regarding the accuracy of performance. Two kinds of feedback are available: right-wrong feedback and explanatory feedback. Right-wrong feedback simply indicates whether the student responded correctly to the item in question. This type of feedback is used when the teacher wants the student to conduct an additional examination of each of the remaining distractors. Explanatory feedback provides the rationale for the correct alternative. ATI makes all practice tests along with all lessons and assignments available throughout the school year in the *K-12 Student-Parent Center*. Accordingly, the student can review these assessments at any time. Moreover, they can respond to test items repeatedly without overwriting their initial performance on these assessments.

### C. Intervention-Group Quizzes

A Galileo® intervention-group quiz is a formative assessment providing information to reduce the risk of failing to master standards for students who are members of an intervention group. Galileo automatically identifies those standards the mastery of which will most likely reduce risk. For each standard targeted by the user, a quiz generator then selects items measuring that standard and automatically constructs the quiz. The scores typically available for a formative assessment are available for a quiz. For example, a quiz might be generated for an intervention group comprised of seventh-grade students at moderate risk for not meeting state math standards. Quiz number-right and percent-correct scores would indicate student performance on the standards most likely to reduce the risk of not meeting state standards. This information would be used to guide instruction.

### D. Optional Tests Attached to Dialogs

A Galileo optional test attached to a Dialog is a formative assessment measuring mastery of the standards addressed in an online *Instructional Dialog*. The test is generated automatically and is automatically attached to the Dialog. However, the user has the option to review and edit the test before it is administered. The optional test scores (i.e. number-right and percent-correct scores) indicate what students have learned as a result of participating in an *Instructional Dialog*. Test results may be used to guide further learning and/or to evaluate the effectiveness of the Dialog in promoting learning. Because of its contribution to the assessment of Dialog effectiveness, the optional test is an important tool in the development of dynamic curriculums continuously updated based on evidence of their effectiveness in enhancing learning.

### E. Project Assessments

A project assessment is a formative assessment carried out over an extended time span to assess student ability to integrate information from multiple sources. For example, a student may be asked to gather a variety of types of information including text, graphics, and videos, to evaluate the effectiveness of each type in presenting a persuasive argument. In addition, the student might be asked to write an essay presenting an effective argument related to the information that was gathered. A project assessment can be treated as a complete formative assessment, or it can be part of a larger assessment such as a benchmark assessment. If the assessment is treated separately, standards mastery scores, total points, and percentage of possible points may be provided. If the assessment is integrated into a larger assessment such as a benchmark test, a scale score may be provided. Project assessments generally involve sufficient cognitive complexity to be classified as DOK level four.

## III. Conclusion

The Galileo *comprehensive assessment system* is among the most extensive and robust assessment systems in the nation. ATI creates thousands of unique tests each year and supports the administration of those assessments to millions of students. The formative assessment component of the system plays a critical role in documenting student learning, evaluating curriculum effectiveness, supporting differentiated instruction for intervention groups, and supporting individualized instruction to assess the achievement of personal learning goals. Galileo formative item banks currently contain over 50,000 certified items. These continuously updated banks are created and managed by ATI content specialists with advanced degrees and

years of experience providing users with one of the largest and fastest growing formative and secure sets of item banks in the country. New proprietary technology has enabled ATI to develop seventeen different types of TE (Technology Enhanced) ensuring that users will have access to the latest item formats when creating assessments. ATI's partnership with Key Data Systems provides an additional 37,000 formative assessment items from the Inspect® item bank that may be made available to users.

Planning technology and test generation technology built into the system make it easy to build multiple formative assessment series aligned to the state blueprint and/or reflecting the district curriculum. Automated formative test generation minimizes the work required to assess student knowledge and skills in differentiated instruction initiatives. Automation also provides formative assessments attached to curriculum lessons supporting automated curriculum evaluation. Finally, technology enabling teachers to build their own formative assessments and integrate them with their own instructional content facilitates the integration of assessment with instruction.

As we all know, education is changing at unprecedented speed. Formative assessment reflects one aspect of that change. In the last year alone, ATI has witnessed a dramatic increase in formative assessment as part of a larger movement toward online assessment. In addition, there is a growing realization of the importance of integrating assessment with the instructional process. Over the past several years, ATI has developed the Galileo® *Digital Curriculum Platform* technology to meet the need for integration. To accommodate the need for rapid change, ATI has developed new proprietary agile software technology. The introduction of that technology will produce innovations at a rapid rate. We will keep you posted.

