The 2014 GED® Test - Science

Short Answer Resource Guide for Adult Educators

October 2013

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Overview and Introduction to
GED® Test - Science Short Answer Resource Materials

This guide has been assembled by GED Testing Service in order to help adult educators increase their understanding of and skill in scoring the Short Answer (SA) questions that appear on the 2014 GED® test - Science. Using these resources will help you identify the various qualities and attributes of SA responses at the full range of score points on scoring guides relating to two example Science SA items that appear on the 2014 GED® program free practice test. Each SA item that appears on the operational GED® test or on GED Ready™: The Official Practice Test has a unique scoring guide applicable to that particular item only. However, studying and working with the materials in this resource guide will enable you to develop an understanding of how these scoring guides are applied to a variety of responses. Further, this guide may help you focus instruction in scientific thinking skills and response techniques to SA items in general.

Using these materials will also help you in scoring SA responses that adult learners provide you as part of their preparation for the test in taking GED Ready™: The Official Practice Test. GED Ready™ is accompanied by the Educator Scoring Tool for GED Ready™ (http://www.gedtestingservice.com/2014testresources), which can help you score student responses. There is one tool per SA item that appears in the GED Ready™. This guide, as a supplement to these tools, is intended to increase your facility with and accuracy in scoring SA items for the Science test.[*]

The materials in this guide are based on two publicly-released SA items that appear on the 2014 GED® program free practice test (http://www.gedtestingservice.com/freepracticetest). The first question and its accompanying exemplar responses are based on a textual stimulus material about the relationship between a particular species of ants (*Ophiocordyceps unilateralis*) and a species of fungus. The second question asks students to design an experiment to test a hypothesis about soil erosion. The stimulus materials and associated prompts (which are incorporated into this guide) were part of an extensive field-testing process that each of the questions on the 2014 GED® test underwent in 2012. The answers to these questions that you will see in this guide are actual responses written by adult students during that field test. These exemplar responses were written under standardized computer-based testing administration conditions that replicate the conditions of actual operational GED® testing on computer in all respects (e.g., instructions provided to students, tools available to students, time allotment, etc., were identical to authentic testing conditions). All of the characteristics of the responses, including spelling, paragraphing and spacing, have been left exactly as originally written and submitted by the students. They also appear here exactly as they appeared to the educator Subject Matter Experts (SMEs) who determined the range of responses for each score point and to the expert human scorers who provided the final certified scores for the responses. The annotations that are presented to enhance your understanding of the score each response received were also written by SMEs.

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[*] Note: Each SA scoring tool is meant to be used as a guide to scoring, but once you become more familiar with the manner in which the SA rubrics are constructed, you will likely be able to score SA response samples without fully following the tool. There is no expectation that you will use the tool for EVERY response that you score, and the materials in this guide should help you begin to gain the skills at evaluation of writing that you will need to effectively score SA responses first with the tool and, later, without relying on it.

The following pages present the textual stimulus and the prompt for the *Ophiocordyceps unilateralis* SA item from the 2014 GED® program free practice test (question 6).

Stimulus

Tropical rain forests contain diverse communities of organisms with many interesting relationships. One such relationship connects parasitic fungi and their insect hosts. A type of parasitic fungus, called *Ophiocordyceps unilateralis,* disperses spores onto the forest floor, but cannot successfully grow on the ground. The fungus requires specific conditions and must grow inside of a specific ant species, called the host, to reproduce. The ants, various species of carpenter ant, make nests in the trees.

O. unilateralis feeds on and grows inside the insect host, and within a few days the fungus affects the insect's brain, The insect exhibits unusual behaviors such as wandering away from the colony to where light and humidity favor fungal growth. Just before dying, the insect bites into and firmly attaches itself to a plant. Then, the fungus slowly grows outward from the dead insect's head, producing a pod of spores that eventually bursts open. The spores fall to the ground, restarting the life cycle of the fungus.

Though this relationship may sound gruesome, researchers note that these parasitic fungi may help maintain biodiversity in the tropical rain forest. Some parasitic fungi may be host-specific, meaning that a fungus species only infects a particular type of insect. Scientists have observed that if an insect population begins to grow, more fungal infections occur, and then the insect population levels off again. This relationship may prevent overpopulation of the habitat by anyone insect species.

Prompt

Deforestation, or clearing away trees, is occurring in tropical rain forests.

Explain how deforestation could disrupt the life cycle of *Ophiocordyceps unilateralis* in tropical rain forests. Include multiple pieces of evidence from the text to support your answer.

Type your response in the box. This task may require approximately 10 minutes to complete.

Ophiocordyceps unilateralis Science Short Answer Scoring Guide

Question Overview: In this SA question, students are required to give an explanation about the effects of deforestation on the particular species of ant described in the textual stimulus. Then, they must cite specific evidence from that text that supports their explanation. Their general understanding of ecosystems and life cycles may help them provide a more precise explanation of how deforestation can be disruptive. This question tests learners' skill at the complex task of using, producing, and justifying a text-based line of reasoning by incorporating elements from the text into the presentation of their own ideas.

Scoring Guide: Each response is scored on the basis of two key elements. Each bullet below describes the *quality* of these elements typical of each score point.

3-Point Response
Response contains
* a clear and well-developed explanation of how deforestation could disrupt the life cycle of *Ophiocordyceps unilateralis* In tropical min forests
* complete support from the passage

2-Point Response
Response contains
* an adequate or partially articulated explanation *of* how deforestation could disrupt the life cycle of *Ophiocordyceps unilateralis* in tropical rain forests
* partial support from the passage

1-Point Response
Response contains
* a minimal or implied explanation of how deforestation could disrupt the life cycle of *Ophiocordyceps unilateralis* In tropical rain forests
* minimal or implied support from the passage

0-Point Response
Response Includes
* no explanation of how deforestation could disrupt the life cycle of *Ophiocordyceps unilateralis* in tropical rain forests
* no support from the passage

Non-scorable Responses (Score of 0/Condition Codes)
Response exclusively contains text copied from source text(s) or prompt
Response demonstrates that the that student has read neither the prompt nor the source text(s)
Response is incomprehensible
Response is not in English
Response has not been attempted (blank)

Science Short Answer Responses and Annotations for *Ophiocordyceps unilateralis*

Text from the responses quoted within the annotations is highlighted in yellow in both the annotations and the student response to help you quickly identify specific elements of each response that helped SMEs score them appropriately. However, keep in mind that each response must be considered as a whole, and these highlighted excerpts are notable mostly because they show specific examples of qualities common to responses.

Student Anchor Response 1 – Score: 3	Annotation
<mark>Deforestation destroys the environment where thousands of species of animals flourish Including Ophiocordyceps.</mark> Ophiocordyceps rely heavily on the environment to survive for two major reasons. First of all, <mark>Ophiocordyceps often find hosts in Carpenter Ants which build their nests high up in the trees of rainforests</mark>. When deforestation occurs, Carpenter Ants lose their nests and homes which would likely result in the diminishment of their species. This would disrupt the Ophiocordyceps species significantly as Ophiocordyceps cannto survive without a host - without the Carpenter Ants, there would be no Ophiocordyceps. <mark>The other reason that Ophiocordyceps would suffer is because without the trees, there would be nothing for them to climb to reach greater amounts of light and less humidity.</mark> While lack of trees would lead to more light reaching the ground, the Issue of humidity affecting the Ophiocordyceps would still exist. With tall trees, the Ophiocordyceps are able to reach heights with less humidity hut deforestation would leave the Ophiocordyceps without a way to escape the humidity ultimately slowing the growth of the fungus. In conclusion, deforestation Would have a very significant Impact on the life cycle of the Ophiocordyceps for without trees there would be no hosts for the Ophiocordyceps to grow and without a way to escape humidity there would be a slowing of growth.	Score Explanation: This 3-polnt response explains how deforestation could disrupt the life cycle of *Ophiocordyceps unilateralis* by stating, (" <mark>Deforestation destroys the environment where thousands of species of animals flourish Including Ophiocordyceps.</mark> ") This statement makes the connection between the destruction of the environment and its negative effect on the life cycle of Ophiocordyceps unilateralis. The explanation is supported with the following piece of evidence, (" <mark>Ophiocordyceps often find hosts in Carpenter Ants which build their nests high up in the trees of rainforests.</mark> ") This piece of evidence links the trees with the living environment of the Ophiocordyceps.

The explanation is further supported with a second piece of evidence, (" <mark>The other reason that Ophiocordyceps would suffer is because without the trees, there would be nothing for them to climb to reach greater amounts of light and less humidity.</mark> ") This piece of evidence links the explanation |

Student Anchor Response 1 – Score: 3	Annotation
	(see comments on the previous page) of a loss of environment back to the statement in the passage which describes how the insects need the light and humidity because those conditions favor growth.

Student Anchor Response 2 – Score: 2	Annotation
Ophiocordyceps unilateralis <mark>feed of the carpenter ant, which nests In the trees. Deforestation will cause many carpenter ant to die because of the lack of homes.</mark> As a result O. unilateralis lose many hosts to feed off of, and In turn reproduction Is disrupted.	Score Explanation: This response explains how deforestation could disrupt the life cycle of Ophiocordyceps unilateralis by stating, ("<mark>Deforestation will cause many carpenter ant to die because of the lack of homes.</mark>") This statement describes how the destruction of the habitat or "home" of the Ophiocordyceps unilateralis has a negative effect on the life cycle of Ophiocordyceps. The explanation is supported with the following piece of evidence, "(<mark>…feed of the carpenter ant, which nests In the trees.</mark>)" This evidence, which Is taken from the last sentence of the paragraph, provides an Indirect reference as to how deforestation will destroy the "home" of the carpenter ant, which will in turn affect the Ophiocordyceps unilateralis. However, this response contains only partial support from the passage and therefore it receives a score of 2.

Student Anchor Response 3 – Score: 1	Annotation
WITHOUT THE TRESS OPHIOCORDYCEPS UNILATERALIS CANNOT GROW <mark>BECAUSE THEY NEED THE TREES TO DISPERSE SPORES ONTO THE FOREST FLOOR IN ORDER TO GROW AND REPRODUCE.</mark>	Score Explanation: This response gives an explanation of how deforestation could disrupt the lifecycle of the Ophiocordyceps unilateralis by stating, ("<mark>BECAUSE THEY NEED THE TREES TO DISPERSE SPORES ONTO THE FOREST FLOOR IN ORDER TO GROW AND REPRODUCE.</mark>") The response explains how the Ophiocordyceps unilateralis requires the trees In order to continue Its lifecycle. However, It does not include any supporting textual evidence from the passage; therefore, this response receives a score of 1.

The following pages present the stimulus and the prompt for the *Farmer's Hypothesis Experiment Design* SA question from the 2014 GED® program free practice test (question 12).

Stimulus Material

A farmer purchased 30 acres of farmland. The farmer calculated that the average topsoil thickness on the farmland is about 20 centimeters.

The farmer wants to maintain the thickness of the soil on this farmland by reducing erosion. The farmer plans to test the effectiveness of two different farming methods for reducing soil erosion.

Method 1: No-till (planting crops without plowing the soil)
Method 2: Winter cover crop (growing plants during the winter that are plowed into the soil in spring)

The farmer hypothesizes that using either method will reduce erosion compared to using traditional farming methods (plowing and no cover crop).

Prompt

Design a controlled experiment that the farmer can use to test this hypothesis. Include descriptions of data collection and how the farmer will determine whether his hypothesis is correct.

Type your response in the box. This task may require approximately 10 minutes to complete.

Farmer's Hypothesis Experiment Design Science Short Answer Scoring Guide

Question Overview: The purpose of this SA question is to provide the student with an opportunity to design a scientific investigation. The student must understand and apply the fundamentals of scientific investigation design in his or her response. In addition, the student must describe an experimental set-up for a controlled experiment, which includes a description of the methods used to collect data. The student must also justify his or her line of reasoning used to determine whether the hypothesis is valid. Correctly completing the multi-step process required by this question involves several critical thinking skills, including identifying a research question, designing a scientific investigation, and justifying a line of reasoning.

Scoring Guide: Each response is scored on the basis of three key elements. Each bullet below describes the *quality* of these elements typical of each score point.

3- point Response
Response contains
- A well-formulated, complete controlled experimental design
- A well-formulated data collection method
- A well-formulated, complete explanation of the criteria for evaluating the hypothesis

2-Point Response
Response contains
- A logical controlled experimental design
- A logical data collection method
- A logical explanation of the criteria for evaluating the hypothesis

1-Point Response
Response contains
- A minimal experimental design
- A minimal or poorly-formulated data collection method
- A minimal or poorly-formulated explanation of the criteria for evaluating the hypothesis

0-Point Response
Response contains
- An illogical or no experimental design
- An illogical or no data collection method
- An illogical or no explanation of the criteria for evaluating the hypothesis

Non-scorable Responses (Score of 0/Condition Codes)
Response exclusively contains text copied from source text(s) or prompt
Response demonstrates that the that student has read neither the prompt nor the source text(s)
Response is incomprehensible
Response is not in English
Response has not been attempted (blank)

Science Short Answer Responses and Annotations for *Farmer's Hypothesis Experiment Design*

Text from the responses quoted within the annotations is highlighted in yellow in both the annotations and the student response to help you quickly identify specific elements of each response that helped SMEs score them appropriately. However, keep in mind that each response must be considered as a whole, and these highlighted excerpts are notable mostly because they show specific examples of qualities common to responses.

Student Anchor Response 1 – Score: 3	Annotation
The farmer would have to set up 3 experiments. The first would be a years worth of traditional farming methods (plowing and no cover crop) on 5 x 5 acres of land. He would have to measure the top soil in every month throughout the year and record It In a lab table. For the second experiment the farmer would have to farm a plot of land 5x5 acres using a no-till plan. He would have to measure the top soil every month for a year and record it in a data table. Finally the farmer would farm a 5x5 acres of land with winter cover crop and measure the top soil every month and record It In a lab table. At the end of the year the farmer would have to compare the 2 methos agaisnt the traditional methid and determine ifhe is correct	Score Explanation: This response earns all three points because it includes a complete description of the experiment and includes the controlled variable, ("The farmer would have to set up 3 experiments. The first would be a years worth of traditional farming methods (plowing and no cover crop) on 5 x 5 acres of land.") The response also describes data collection methods for the control group and experimental group by stating that the farmer ("... would have to measure the top soil every month for a year and record It In a lab table.") Finally, the response provides an explanation of how the farmer will determine if his hypothesis is correct, ("At the end of the year the farmer would have to compare the 2 methos agaisnt the traditional methid and determine ifhe is correct")

Student Anchor Response 2 – Score: 2	Annotation
The farmer could separate the land into two sections (15 acres each), and use one method on each section over a two season period. Over the two season period he would record how much soil was left after using each method, comparing the results to each other and the traditional farming method.	Score Explanation: This response include a logical description of the experiment, ("The farmer could separate the land into two sections (15 acres each), and use one method on each section…") While the response does not include the controlled variable in this initial description of the experiment, in the last sentence of the response the writer states, ("…comparing the results to each other and the traditional farming method.") This statement demonstrates that the writer understands the connection and importance of having the controlled variable as part of the experiment and data collection methods. The response also describes a logical data collection method by stating, ("Over the two season period he would record how much soil was left after using each method…") However, this response only provides an implied, logical explanation of the criteria for evaluating if the hypothesis is correct by stating, ("…comparing the results to each other and the traditional farming method.") While it is clear that the response is attempting to connect the results of the experiment with an evaluation of the hypothesis, this is not a complete statement.

Student Anchor Response 3 – Score: 1	Annotation
To test his hypothesis the farmer should divide his land into three equal parts one for the first method,one for the second method and one for the controle group. In the first part he divided he should test method one and keep a record of the process and the results. In the second part he divided he should test the second method and keep a record of the process and the results. In the third part that he divided he should have the controle group where he would use the traditional method keep a record of tre process and the results,then compair the records he has collected identify the different results, make an annalasys and decide which method Is the best way to prevent soli erosion.	Score Explanation: This response includes a description of the experiment, ("…the farmer should divide his land into three equal parts one for the first method,one for the second method and one for the controle group.") The response also describes a poorly formulated data collection method by stating, ("In the first part he divided he should test method one and keep a record of the process and the results. In the second part he divided he should test the second method and keep a record of the process and the results. In the third part that he divided he should have the controle group where he would use the traditional method keep a record of tre process and the results …") While the response Is describing the collection of data In all three sections of land, the phrase "keep a record of tre process and results" is NOT a clear statement describing what type of data will be collected. The response also describes a minimal explanation of the criteria for evaluating the hypothesis by stating ("…compair the records he has collected identify the different results, make an annalasys and decide which method…".)

Automated Scoring of Constructed Response Items on the 2014 GED® Test

The 2014 GED® test contains four Constructed Response (CR) items: one 45-minute Extended Response (ER) item on the Reasoning Through Language Arts (RLA) module, and two 10-minute Short Answer (SA) items on the Science module.

Logistically, the ER item in RLA is in its own separately-timed section of the test at the end of the first half of the RLA module (prior to a 10-minute break). The Science SA items are distributed within the 90-minute Science module and are not timed separately—students use their time-management skills to monitor their use of time on those items and are given guidelines as to approximately how much writing is expected in those responses (the student is instructed to take up to about 10 minutes to read the question, and formulate, write, and edit their answer).

It was a critical goal of GED Testing Service to incorporate CR items into the design of the 2014 GED® test because these types of items are a key method of assessing a student's higher order thinking skills as well as their skills in expressing themselves clearly in their own words. To ensure that the results of testing are available to students in the quickest timeframe possible (because adults usually do not have the luxury of waiting days or weeks for their test results to be finalized), GED Testing Service will be scoring CR items using an automated scoring engine, supplemented by human scorers as necessary, described in more detail below.

Great strides have been made in automated scoring over the last decade, and the use of automated scoring is intended to replicate the human scoring process. However, the automated scoring engine will need to be supplemented by human scorers in certain circumstances. Automated scoring is not fully developed enough to result in reliable scoring in the area of mathematics, so GED Testing Service elected not to incorporate CR items into the Mathematical Reasoning test. We hope in the future to be able to build those item types into the test as the technology develops and matures in the future.

The following description applies equally to all CR items, whether ER or SA.

During the item development process, experts in automated scoring are involved from the outset, rather than being brought into the process after items have already been authored. This collaborative consultation and review helps ensure that responses have a high likelihood of being reliably scored by the automated engine. For example, questions that do not provide adequate instruction to the students about what information they should include in their answers sometimes produce a wide and/or unpredictable range of responses that both people and computers can have difficulty in scoring consistently. Creating item stems that focus the student on the specific expectations of the item is important so that the item can both validly assess the intended content specification and also have a high probability of being scored appropriately and reliably both by humans and computer.

Once items have been written, reviewed by both scoring and content experts, and finalized, they are field-tested. In the case of the initial forms for the 2014 GED® test, thousands of students in locations across the U.S. in the summer and fall of 2012 participated in the field-

testing. The students that were recruited to participate matched the profile of our adult GED® test-taking population. At the conclusion of field testing, the written responses to the CR items were examined and a sample of student responses was selected for each of the items. Teams of content experts reviewed the responses in a process known as "rangefinding." The purpose of rangefinding is to determine range and variety of responses that fulfill each score point as defined on the rubric that is very carefully constructed and designed to guide the overall evaluation of responses. This standard best-practice procedure for the scoring of CR items results in the selection of exemplar responses at each score point. These responses are used to build anchor sets (human scorers' official guide that is used in evaluating student responses), practice sets (sets of responses used in training human scorers), and qualification sets (sets of responses that scorers take in a "quiz" in which they must match their scores to "true scores" given during rangefinding to qualify to appropriately and reliably score CR items).

When these materials have been compiled and scorer training is complete, all of the student responses from the field test are scored by humans, using the "double read with resolution" approach. This scoring model entails each and every response being read and scored independently by no fewer than two individuals. If the scores applied by the two different scorers are in exact agreement, the score for that response is final. If the two scores differ by only a single point, they are averaged and rounded up, effectively resulting in acceptance of the higher score point. If the scores differ by more that one point ("non-adjacent scores"), the response is read by a scoring leader (an expert scorer) who determines the correct score for that response in a process called "resolution." Because the ER items are scored across three key traits, each of which contains multiple dimensions that are considered together in a compensatory manner (meaning that a response that is particularly strong in one dimension can still receive a higher score even if it is weaker in other dimensions), each ER response is actually read by no fewer than six people. That is, each scorer is trained to score only one rubric trait, and two scorers trained on each of the three traits read each response. Therefore, it is possible for a single ER response to be read by up to nine people, if the first two scores on all three traits are non-adjacent. This process ensures that the human scoring process produces the highest quality results and data.

When the scoring of all of the responses generated through field-testing is complete, a team of content experts, psychometricians and automated scoring experts reviews the range of scores for each constructed response item. At that time, some items are rejected because they do not meet the minimum criteria for inclusion on any operational 2014 GED® test or GED Ready™: The Official Practice Test. Items that survive this process then are passed along to the scoring organization to train the automated scoring engine. Several hundred scored responses for each item are fed into the automated scoring engine. Then, several hundred more scored responses are used to test the reliability of scores generated by the automated engine. The engine evaluates each response on over 100 different dimensions in relation to the score that the response was given. Through this training and testing procedure, the automated engine "learns" how to score the items and is then able to replicate the scoring that was done by humans. Once this process is complete, data from the replication process is reviewed, and occasionally, if the scoring is determined to be insufficiently reliable to be used on an operational 2014 GED® test during this data review, some items may be allocated for use on GED Ready™ because the CR items on the practice test are always scored by humans.

Only CR items that successfully survive the entirety of this process are placed on operational 2014 GED® test forms. When the test goes live in 2014, students will respond to the CR items

and their responses will be fed into the automated engine for scoring immediately upon completion of each individual content area test. Of course, there will be a slight delay in submission of responses for scoring in some testing situations, such as with tests administered within the corrections system, in which the testing center is Internet independent. In these situations, additional steps need to be taken to upload the raw testing data (e.g., the students' responses themselves) via a secure Internet connection.

Based on the experience of GED Testing Service with automated scoring during the field testing and other test development processes, we expect the vast majority of student responses (most likely 95 percent or greater) to be reliably scored by the automated scoring engine—in a process that is completed in nanoseconds. However, as with any process that involves the variability present in people's writing, there will be responses that the automated scoring engine will recognize as not fitting any type of response that was previously seen in the training of the engine. For example, an extremely short response that uses a great deal of advanced vocabulary might be unusual and therefore would be automatically flagged by the automated scoring engine as an "outlier" in need of human intervention for scoring. These outlier responses are securely routed electronically to a network of human scorers who have been trained to score the item using the anchor items and training sets created during the rangefinding process, as well as the scoring rubric that is used to provide overall guidance to the scoring process. These human scorers score the student response using the "double read with resolution" framework that was also used to score the field test responses.

Although the human scoring process is efficient, it does require additional time. GED Testing Service is committed to returning test results and a score report to students within three hours of the completion of each test. Of course, the vast majority of results would actually be ready immediately because of advantage of the speed of the automated scoring, but, in order to manage student expectations and avoid situations in which one student at a site receives a score immediately while another student does not, a three-hour delay has been built into the process of delivering test scores.

Three additional quality control procedures have also been built into the automated scoring system to ensure that students receive reliable and valid scores from this process.

First, when the test goes live in 2014, the program will implement a process known as the "Initial Analysis Period" (IAP). The purpose of the IAP is to provide final validation of the automated scoring engine and its performance with the adult population of GED® students. During the IAP, all CR responses will be scored both by the automated scoring engine and by human scorers (using the "double-read with resolution" model as appropriate). This ensures that all students are being evaluated fairly and that the automated scoring engine is operating properly.

Second, an audit procedure will be conducted on an on-going basis, in which a percentage of all student responses scored by the automated engine will be reviewed by human scorers. This audit will be *in addition* to the scoring of "outliers" described above, and will help to ensure the ongoing accuracy of the system.

Third, an automatic rescore process is being implemented. This process flags tests that have a failing score within a predetermined margin, such that if the CR scores on the test would have been higher, the final score result would have changed from "fail" to "pass." The CR responses

on these flagged tests will also be automatically routed to human scorers for evaluation so that the results from the automated scoring engine can be confirmed or adjustments made.

Because of the extreme care that GED Testing Service is taking with implementation of the automated scoring engine, in combination with human scoring and audit procedures, we are highly confident that our approach will produce high quality results with reliable and valid test scores for our students. Due to ongoing involvement of human scorers in the scoring process (through the IAP, evaluation of outlier responses, the audit procedure, and the automatic rescore), the database of known response types will grow over time. This expanded response base will be used to periodically retrain the automated scoring engine to further improve its performance.

Finally, another key benefit of using the automated scoring engine technology is that it allows GED Testing Service to integrate specific feedback on students' performance on the extended response and SA items right into the standard score report—a useful new feature that has never been possible in the past with the paper-based scoring system. This valuable process is part of GED Testing Service's effort to create a more learner-based testing system that will help guide students to continuously improve their performance.