**Getting down to the Nitty Gritty:**
***Making Content Assessment Work for ELs***

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*Part II*

The first article about classroom assessment (Kopriva, Spring, 2010) focused on some key underpinnings EL specialists need to consider as they prepare to help content teachers assess the content knowledge of skills of English learners in such subjects as mathematics, science, social studies, and even ELA (in cases when the focus of the assessment is not on literacy but on literature or related topics). Over the last few years, EL specialists have been encouraged to work with content teachers in order to help them integrate English academic language into their content instruction so EL students can most effectively learn academic language within context while they are simultaneously learning content. These best practice *teaching* techniques involve integrating these two disciplines concurrently as content lessons are being taught. Good *assessment* of both of these disciplines, however, is different. In order to effectively evaluate what EL students have learned, it is essential and important to tease apart the measurement of knowledge and skills associated academic language in English, on one hand, and content, on the other.

This article will focus on some specific tips associated with successfully measuring content for English learners who are still learning English language and literacy skills. While EL specialists generally teach language to ELs, it is imperative that they work with content teachers to come up with adapted content assessment opportunities that measure the same content as the assessments for native English speakers, at the same cognitive complexity levels. Even though the content teachers are the ones with the deep knowledge of their subject matter, for the most part they do not know how to properly adjust their assessment activities to effectively tease apart the content knowledge of these students as opposed to measuring their English language limitations. Just like it takes our students time and repeated practice to learn English skills, content teachers will need to engage with EL specialists in an ongoing manner to be able to absorb the compensatory and support skills necessary in order to build a robust repertoire of

techniques they can continue to use to evaluate the content knowledge and skills of their English learners.

To help the content teachers, it is recommended here that EL specialists develop a toolbox of techniques to share. This toolbox, which will be expanded and refined over time, would include (1) methods, (2) strategies and (3) approaches.

(1) Methods refer to general ways EL specialists have learned to use to communicate with their EL students and involve a variety of multi-semiotic tactics relevant for communicating academic content knowledge between the teacher and student. These include, but are not limited to, procedures and guidance associated with when, where, and how EL students and/or teachers:

- Demonstrate contexts, or demonstrate skills or concepts as part of responses to questions.
- Act out or role play action words or phrases in contexts, questions, or language components of responses.
- Use concrete materials to support or supplant text in questions or responses.
- Use visuals, including videos, pictures, graphics, to support text or to supplant it in the questions or responses.
- Use sounds, including music and sounds related to phenomena, to support text or to supplant it in the questions or responses.
- Use related materials or short activities immediately prior to the assessment to focus the student in general, while not cuing or supplying target information associated with particular questions.
- Use L1 in text or orally, even if the students are not literate in their L1, or are not predominately taught the content in their L1. This method generally supports English text in the assessment or project tasks, and is used in conjunction with English text/oral directions. The support can take the form of bilingual glossaries or word/phrase associations in both languages, clarification of contexts and action language not learned yet by the student, or relevant content associations not targeted by individual questions. It is generally used with English learners at the low to midrange levels of English proficiency. It may also be used with ELs at the more advanced levels when more cognitively complex language is being communicated. Often this language involves

particular language structures, or requires a precision or nuance not possible with other types of interaction strategies.

- Point to relevant stimuli in the environment, or to meaning associated with relevant knowledge or skills learned as part of instruction, which may otherwise be communicated through language as part of assessment tasks but not the intended target of the tasks.

(2) Strategies are specific examples of methods that may be suitable for assessing content in particular instances. For example, concrete materials in mathematics classrooms could certainly involve manipulatives such as tangrams, building blocks, unit cubes, or "play" money, and use of geometric shapes, protractors and rulers, or simulation devices. In science classrooms situation-specific strategies include experiment paraphernalia such as beakers, measuring tools, or materials associated with the topics, as well as the substance associated with experiments or lessons, for instance, different kinds of soil, movable objects used in force and friction activities, or light related devices. Role playing of particular characters or situations might be particularly relevant in history or literature classes, as might relevant food, sounds or music, or particular types of graphic organizers associated with a number of different content topics. The main thing to remember in all cases, is the strategies must NOT cue responses to the intended target in specific questions, and care must explicitly be taken to ensure this not only for individual questions but also that supports in one question do not affect the target in any others, when a set of questions are being asked together.

(3) Approaches would be examples of how to use particular combinations of adaptation methods and strategies to convey meaning to the student about what specific assessment tasks are asking them to know or do, and/or conveying what students know from the student back to the teacher. However, before EL and content teachers can begin to build successful approaches that are accessible for ELs, two sets of preliminary information are necessary.

First, the EL and content teachers must both be clear about what it means to teach and assess content knowledge and thinking skills that are targeted at different cognitive complexity levels in the content. Different cognitive complexity levels are a vital part of good teaching because true mastery involves deep knowledge and the ability to reason well in a variety of

circumstances, while lower levels develop necessary building blocks that students with deep knowledge and skill levels use. Briefly,

- Lower levels of cognition include recalling facts, lists, or definitions, and identifying or recognizing appropriate content information.
- Middle levels introduce abstract thinking abilities, such as categorizing, organizing, analyzing, relating information using a relatively limited amount of phenomena, and solving problems with more than one, but relatively few, steps.
- The higher levels of cognitive learning poses more complex problems, where students need to organize and carry though a multi-step plan, juggle a wider range of information, know how to distinguish relevant from irrelevant concepts and strategies, and when and how to use relevant information in a complex coherent way.

  As an example, higher levels of thinking could call for using information from multiple conceptual systems, synthesizing, or interpolating.

In all cases, as the teachers work to adapt the general education task for ELs, it is important to make sure the cognitive complexity of the content stays at the same level of rigor for both.

Second, it is essential that both teachers are clear about what the content teacher REALLY wants to assess. In other words, what are the learning objectives of the lesson the assessment is for, and how do the learning objectives translate into what each of the questions are asking? For example, perhaps a science teacher asks her students to write a summary of the experiment the teams have performed and discussed in the previous class. The EL teacher might ask the science teacher what she wants to assess, or better yet, precisely, does she want to know that the students have learned? Often content teachers have a general idea about what they want to know from students, but in order to adapt assessments properly for ELs, it is important to get a very clear and explicit understanding. In probing this particular science teacher, the EL specialist found out that she isn't terribly interested in whether the students can 'write' a summary per se. On the other hand, she *is* interested in making sure they can clearly identify and communicate the relevant factors, procedures, findings, and key implications. Further, she is fine with the students 'communicating' in non-standard ways, as long as they can clearly identify and convey meaning to her about these four sets of information. She also wants to make sure that her EL students will be held to the same standard of complexity and doesn't want to advantage them

or ‘dumb down’ the task when she gives them latitude in how to communicate their knowledge. These teachers found common ground upon which to build a successful adaptation.

## Some Strategies and How They Are Used in Two Approaches

Below is an explanation of successful approaches for adapting an elementary science and math task. While these examples come from computer-interactive assessments, they exemplify some of the points addressed above and can be easily translated to classroom settings. Generally, in order to effectively adapt general education content tasks to utilize the strengths of English learners and minimize their challenges, the teachers need to carefully consider how to adapt three parts of content assessment questions or tasks simultaneously: a) presenting the problem context, b) the main or target question(s) which asks students what the teacher primarily wants to know, and c) the response environment. This is because the only way to successfully adapt for ELs is to ‘share’ the charge to convey meaning across the various parts of the content task (and its rubric if it’s an open-ended task), rather than leave all the ‘adapting’ to only one part. After coming to a common understanding about what knowledge and skills the general education tasks are intended to assess, the next step is to outline an approach to adapting the task in order to measure the same targets at the same complexity levels. Then, once the approach framework is in place, the teachers will identify selected methods/strategies for each of the three parts of this task which properly address the approach framework.

### Buoyancy Task

The first example is an adaptation from a general education constructed response task in science designed to be accessible for students with only a low level of English proficiency. Both tasks are measuring if students understand the concept of buoyancy, and both measure the task objective at a mid-level of cognitive complexity. The concept of buoyancy involves the extent to which objects float or sink in liquid based on their approximate densities, and the displacement of liquid based on submerged or partially submerged objects.

The general ed constructed response question asks students to explain the concept of buoyancy. The rubric determines that students must identify both aspects and that their explanation must include sufficient detail in order to show they differentially understand how

buoyancy is impacted for objects of different size/densities. On average, students would write about 1-2 paragraphs of text to respond to the constructed response question. The basic outline of the approach for the adapted task, on the other hand, has the students 'explain' by demonstrating how three related objects (carefully depicted to provide discriminatory information) sink or float in a liquid, and how the water is displaced for each of these objects. By demonstrating their knowledge for each the three objects, and by demonstrating how they react with the liquid relative to each other, the responses holistically show if students understand the nuances associated with deep knowledge of the concept of buoyancy. Importantly, in the adapted task, no language is required for students to explain their knowledge and the little language that is used in the problem is supported.

Deciding on the framework of the adaption approach involves making initial decisions about how to adapt, and then filling in the specifics as the details are considered. In the buoyancy example, by understanding what the general ed task is measuring, the adapted task can take another tact while still measuring the same concept at a similar level of complexity. Coming at the same knowledge or skills from a different perspective is a relatively common design strategy associated with EL adaptations. Once the general outline has been identified, the teachers developing the adapted task will consider how the problem context, the question, and the response environment can be designed to reflect this decision.

As Figures 1 to 3 suggest, the problem context for this task does not use any language to communicate to the student. Instead, an animation explains the set up through introducing the background environment, the focal elements, and the action taking place in the problem; in a classroom this would be replaced by the strategies of the teacher setting up the particular problem situation and performing the action with little or no language. These selected screen shots provide a sample of this animation. Additionally, rather than explain the substance of the balls with language, the strategy of still pictures depict what the balls are made of when students roll over them (Figure 4); this can be recreated in the classroom as well. Here, the buoyancy task uses the common strategy of 'storytelling' to present the meaning of the context within which the targeted question will emerge. Adapted tasks frequently use the problem context as an opportunity to introduce 'the players', including the background topic, the focal situation, and at

least some of the relevant variables. This lessons the burden on the actual target question because students can reference back to the context rather than burdening the target question(s) themselves with this charge.

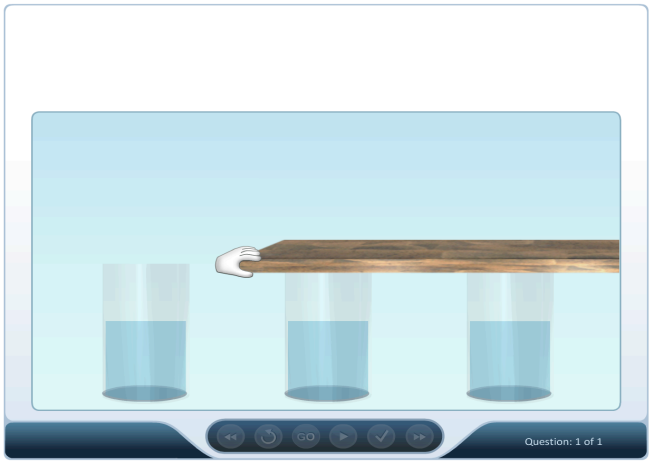


Figure 1

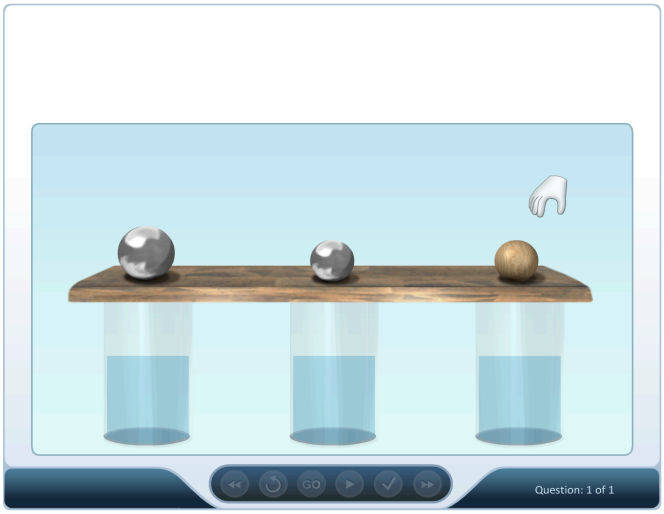


Figure 2


Figure 3

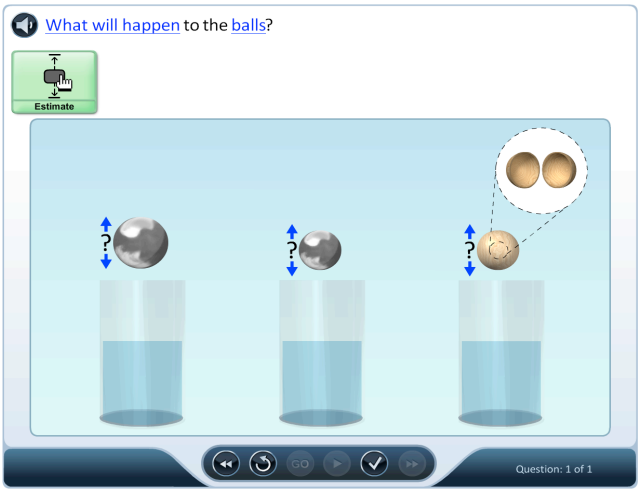


Figure 4

The buoyancy task includes two target questions—one which focuses on the density of the objects and how these impact whether they sink or float (Figure 4), and one which asks about the liquid displacement (Figure 5). It is recommended that target questions, which are the core requests to the student about what teachers what to know, be stated in simple, clear, direct, language. The questions focus only on the task demand; in adapted tasks the targets do not have the burden of explaining the context, and because they are not burdened with explanations about the problem or holding the response options (as are multiple choice questions). If the student was taught this topic in English this text would be in English, although it can be supported or also translated into the students L1 (In this task, besides viewing the written text, students are given

the choice of hearing the question orally in English or their L1.) Using two different modes (written or oral) and/or two different languages to communicate the target demand is an example of the strategy of redundancy, a strategy commonly used in adapted tasks, especially when supporting language. The language is supported in another way as well—when the verb phrases and the noun or noun phrase in the questions are rolled over, a blue 'halo' appears around the relevant portion in the response environment for students to . For instance, when 'what will happen' is rolled over in Figure 5, a halo appears around the question mark with the arrows suggesting this is the place to respond to 'what will happen'—here, students are focused on how to respond by dragging the water levels up or down to reflect displacement. This can be recreated in the classroom by pointing to or acting out what the particular language is meant to anticipate.

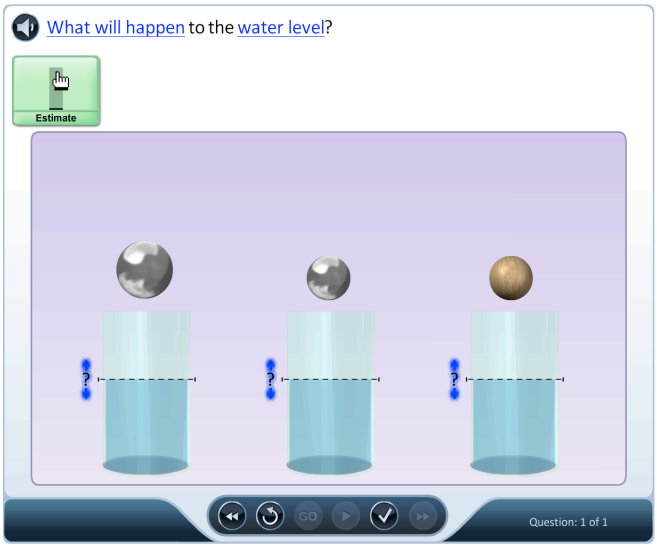


Figure 5

Two strategies in the response environment of the buoyancy task are noteworthy. First, this task purposefully uses three overlapping types of balls (in either size or substance) and two separate questions to probe the student about their knowledge of buoyancy. For students to respond correctly, they have to correctly demonstrate how each of the balls and each of the water levels for the balls interacts to reflect the buoyancy concept. It may have been possible for students to superficially respond to this question if the design had not considered the overlapping strategy. Setting up response environments where correct responses cannot be manipulated at a lower cognitive level is an important element in many adapted tasks. If done correctly, properly

designed response environments allow teachers to probe nuances and otherwise evaluate more challenging concepts than they could if they did not address the response side of the task. Second, the response environment in this adapted task and most others is integrally reinforced by the problem context and the supported questions in the task—otherwise, it would not have been possible for students to respond robustly with no language. Buoyancy uses the strategy of demonstration as the vehicle for students to communicate what they know, and is able to do so because the elements have all been introduced and supported previously. Demonstration is a powerful technique because it frequently shows far more than students can articulate through language. However, adapted tasks must use this strategy appropriately in ways that retain the integrity of the intended learning objective, and the buoyancy task is an example of how this strategy is use effectively.

**Balance Task**

Foreshadowing the skill of balancing equations, the adapted algebra readiness balance task is measuring if 4$^{th}$ grade students understand the concept of balance in context, and how to take three sets of unequally weighted objects and place two different objects at a time on two sides of two different scales in such a way that the scales will balance. Substantial language is usually used to convey the task demands of this relatively cognitive complex question to students and have them convey their understandings in return. To properly address the demands of this task, a more 'elaborate' context than usual was proposed in the approach.

Specifically two sets of strategies are used in the adapted task to convey the problem context. In the first set, students are introduced to the focal objects and the scales, and an animation shows the topic of the task—that unequal objects are put on scales in order to balance them (see Figures 6-7). The final frame of the animation also tells students about the weight ratio between the different objects. As in the buoyancy task, students are introduced to these elements without language, and this strategy can be recreated in the classroom in a similar fashion. At the end of the animation a language supported sentence appears. This strategy is used to underscore what the student should be focusing on in the animation—to balance the scales. This sentence introduces the language of 'scale' and the blue halo roll over relates it to the visual on the screen; the sentence also introduces the language of 'balance' and the animated roll over where a scale

is balanced associates the term with what they just viewed. Figure 8 shows the context sentence and a screen shot from the balance roll over which appears just under the language it supports. Utilizing these techniques in the context portion of the task focuses the student on the particular topic and alerts the student's cognitive processes to attend to two of the three focal task elements. It also means the target question is relieved of this burden. In the classroom the adapted task (and any well written task) should be mindful of clearly conveying the focal cognitive intent. By incorporating the acting out, pointing out, and selective use of key language strategies to introduce the topic and two of the relevant task elements, this purpose can be accomplished with very little language.


Figure 6


Figure 7

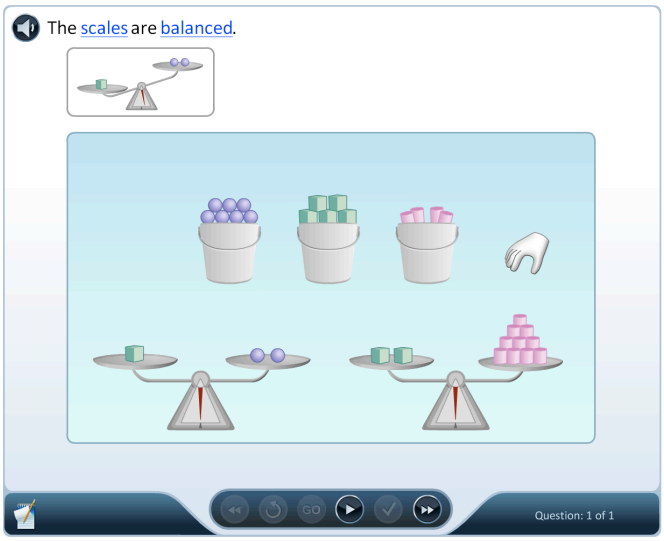


Figure 8

The second set of strategies used in the problem context is to focus the students explicitly on the third task element, that is, the concept of relationship between objects of unequal weight. Here students are actually asked a question, and expected to answer it (see Figure 9). This is not the target question but one which is meant to have students attend to one of the relationships. Rather than shy away from all language (as some novice teachers may consider), this strategy actually uses language to underscore the third element of the task. However, as the reader can see, the question is simple; the teacher is not interested in seeing if students can compute that ½ of 10 is 5. They are interested in focusing the student on the relative weight of two associated objects.

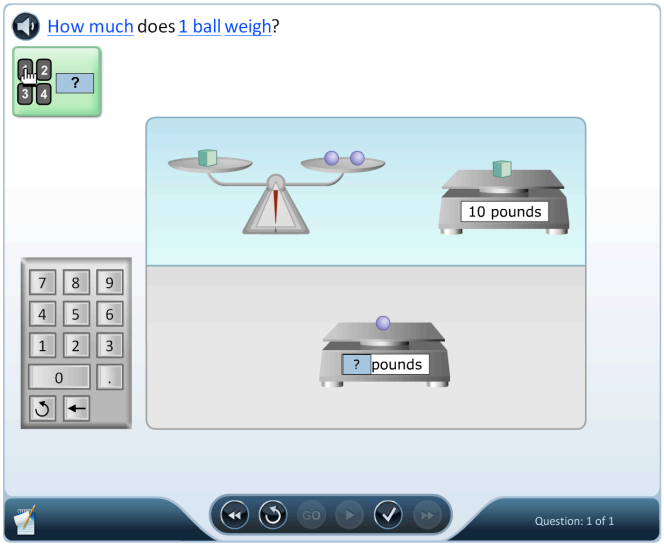

Figure 9

Given the 'heavy lifting' work of the problem context, the target question is allowed to convey the task demand in a very straightforward and direct fashion (see Figure 10). The language has been supported previously (and is supported again, for redundancy reasons), as have the 'explanations' of the three focal cognitive demands inherent in the question. Likewise, the response environment is straightforward as well, and, as in the buoyancy task, it uses the strategy of demonstration with no language required (Figure 10). Also, like in buoyancy, the environment involves a careful and deliberately designed milieu with two demonstration opportunities. The top portion of the response environment establishes the student's ability to balance the scale given known relative quantities. The bottom portion asks students to demonstrate their knowledge by completing a new multi-step transformation and then balance: it requires the student to take what they know about the weight relationship between balls and cubes, and what they know about the relationship between cubes and cylinders, to determine how to balance the relationship of cylinders to balls. Thus, while very limited language is used throughout the task, and none in the response environment, this adapted task gives the teacher the opportunity to learn the extent to which students have understood this cognitively complex concept of balance, and the skill of how to 'transform' in order to achieve balance. It also is designed to suggest to teachers if the students fall short, then why.

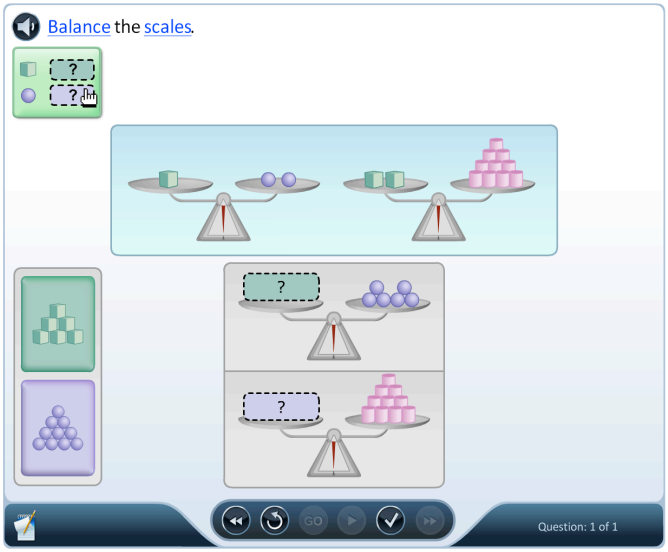


Figure 10

## Summary

This article is meant to introduce readers to some of the main concepts inherent in adapting general education content questions and tests for English learners. It has also presented two examples of how situation-specific approaches involving the use of selected strategies and methods used in tandem might be assembled in order to develop successfully adapted tasks. Some take-away points include:

- Use a variety of strategies and methods in designing adapted tasks. Mix up what approaches you use. Base the approaches on the lesson objectives—different ones naturally suggest different approaches to assessing the content objectives in most cases.
- Use contexts and well-designed response environments to share how meaning is conveyed. Strategies may involve a 'telling a story', demonstration, asking 'set-up' questions, or other devices as long as they don't cue the responses. The purpose of the context is to engage the students in the topic, and to present many of the relevant components of the targeted assessment before the actual questions. Such an approach sometimes argues for a somewhat 'themed' approach to assessment where multiple independent questions might come from a common environment. Designing response environments means asking what does the student have to *do* for the content teacher to know what they have learned. Once content teachers can think about what 'learned' might look like, EL and content teachers can select strategies that reflect this kind of demonstration.
- Repetition and redundancy are key. Use similar visuals, symbols, language or demonstrations throughout a task or themes of questions. Use more than one method of supporting when possible, especially when supporting language. While these are not good writing practices they are effective strategies for content assessments.