



## CREATE ACTIVE ASSESSMENTS WITH CERTAINTY-BASED MARKING





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11639 E. Wethersfield Road, Scottsdale, AZ 85259 USA

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## GAIN GREATER INSIGHT INTO LEARNER PERFORMANCE USING CERTAINTY-BASED MARKING ASSESSMENTS

Let's start by taking a quick look at your current testing strategy. How do you currently assess learners' knowledge after completing a training course? If it includes presenting a series of instructionally sound multiple choice questions, you're not alone. However, many learning organizations have realized a margin for error in this typical assessment method – the **guess factor**.

In other words, learners tend to guess at questions they don't know, in an attempt to raise their scores. These guesses might be based on 1) sheer speculation or 2) a combination of limited knowledge and a lack of confidence in that knowledge. In either instance, the guesses can contribute to an unrealistic measurement of competence.





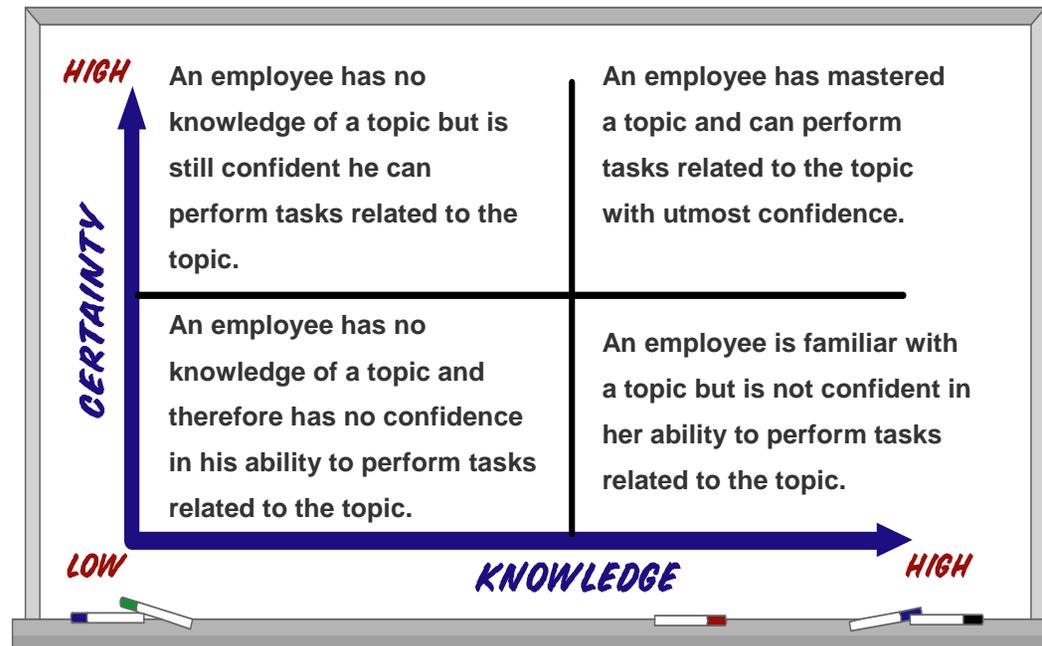
### Promote Active Learning with CBM Assessments

*Traditionally, assessments can be quite passive—instructors get into a rut using one or two question types and learners simply aim for a passing score. Adding the Certainty-Based Marking technique to assessment questions increases the level of activity by asking learners to reflect upon what they know and don't know.*

*For Learning & Development teams and learners alike, CBM reporting data provides key (and otherwise overlooked) information that can assist in gauging the individual's needs, encouraging self-direction, monitoring progress and checking for understanding.*

### Presenting a Simple Solution

What is Certainty-Based Marking (CBM)? CBM is a simple and relatively new technique that strives to make measurement more realistic. This strategy incorporates two equal elements in assessment: **Knowledge** and **Certainty**. Consider the four knowledge/certainty relationships in the following table:



At the end of a training program, you hope most employees are in the **High Knowledge / High Certainty** quadrant, but how do you know for sure? That's where Certainty-Based Marking can help.



## How it Works

Is your current strategy to assess knowledge effective?

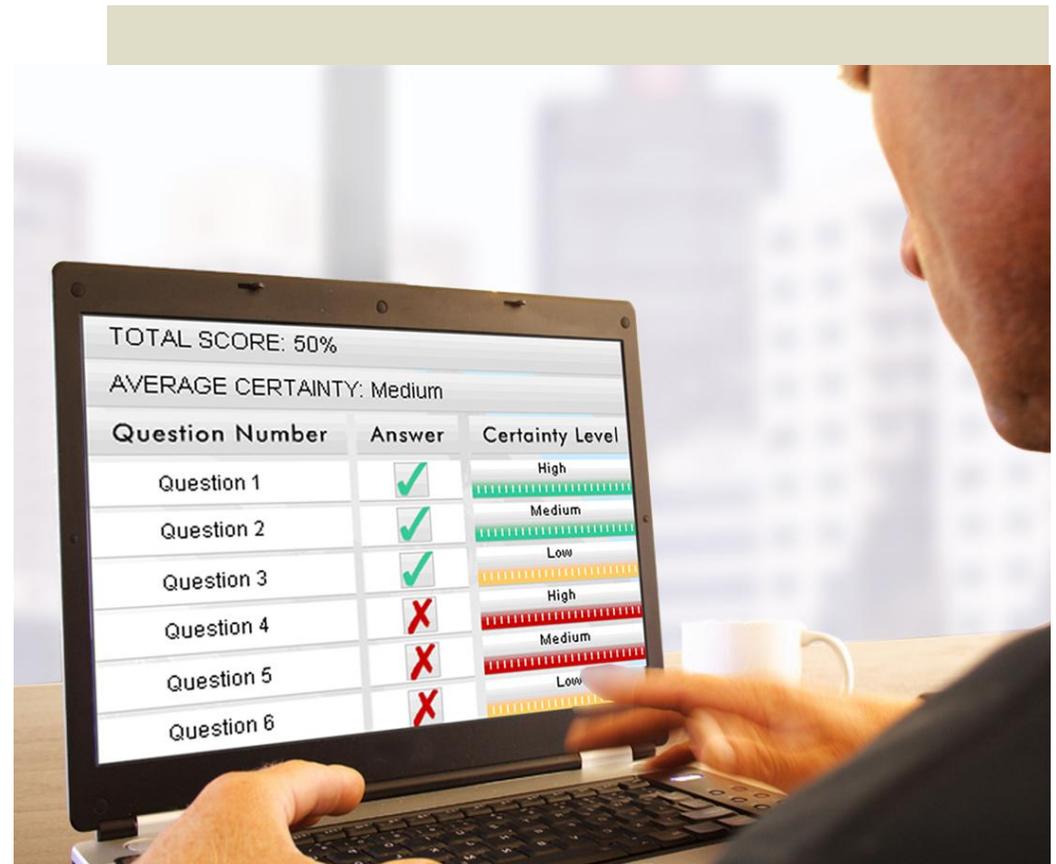
Yes  No

How confident are you in your answer?

Unsure  Somewhat Certain  Totally Certain

Certainty-Based Marking offers a unique engagement opportunity during a training assessment. Much like the two questions shown above, a question is presented and then the learners are asked how certain they are that their answer is correct. At the end of the assessment, learners are given an assessment summary chart showing color-coded marks (red, green and yellow) for each question based on their answer and their level of certainty. The table shown to the right is an example of a scoring chart used with CBM.

Learners obtain these color-coded cues to alert them of the accuracy of their knowledge and certainty. There is no penalty or reward for having high, medium or low certainty in an answer, but Certainty-Based Marking does provide the learner (and their supervisor) with a clearer understanding of his or her depth of knowledge.





## Sample Questions

The Certainty-based Marking technique can be paired with a wide variety of question types. Below are just a few examples of question types you can use in your next course to encourage learners to think laterally and adopt a more active role during assessments.

Question Types		Possible Answers		Certainty level
<b>Multiple Choice</b>	<i>What is the speed limit for rural roads if no speed limit signs are posted?</i>	<b>A.</b> 30 mph <b>B.</b> 35 mph <b>C.</b> 40 mph <b>D.</b> 45 mph		<input type="checkbox"/> <b>High</b> <input type="checkbox"/> <b>Medium</b> <input type="checkbox"/> <b>Low</b>
<b>True / False</b>	<i>The speed limit for rural roads if no speed limit signs are posted is 40 mph.</i>	<b>True</b> <b>False</b>		<input type="checkbox"/> <b>High</b> <input type="checkbox"/> <b>Medium</b> <input type="checkbox"/> <b>Low</b>
<b>Matching</b>	<i>Match speed limits for each of the following:</i>	<b>1.</b> Interstate Highway <b>2.</b> School Zone <b>3.</b> Residential Area <b>4.</b> Rural Road	<b>A.</b> 50 mph <b>B.</b> 35 mph <b>C.</b> 15 mph <b>D.</b> 70 mph	<input type="checkbox"/> <b>High</b> <input type="checkbox"/> <b>Medium</b> <input type="checkbox"/> <b>Low</b>
<b>Fill in the Blank</b>	<i>The speed limit for rural roads if no speed limit signs are posted is _____.</i>	[Student to provide answer.]		<input type="checkbox"/> <b>High</b> <input type="checkbox"/> <b>Medium</b> <input type="checkbox"/> <b>Low</b>
<b>Short Essay</b>	<i>Describe the different between interstate and intrastate highway systems.</i>	[Student to provide answer.]		<input type="checkbox"/> <b>High</b> <input type="checkbox"/> <b>Medium</b> <input type="checkbox"/> <b>Low</b>



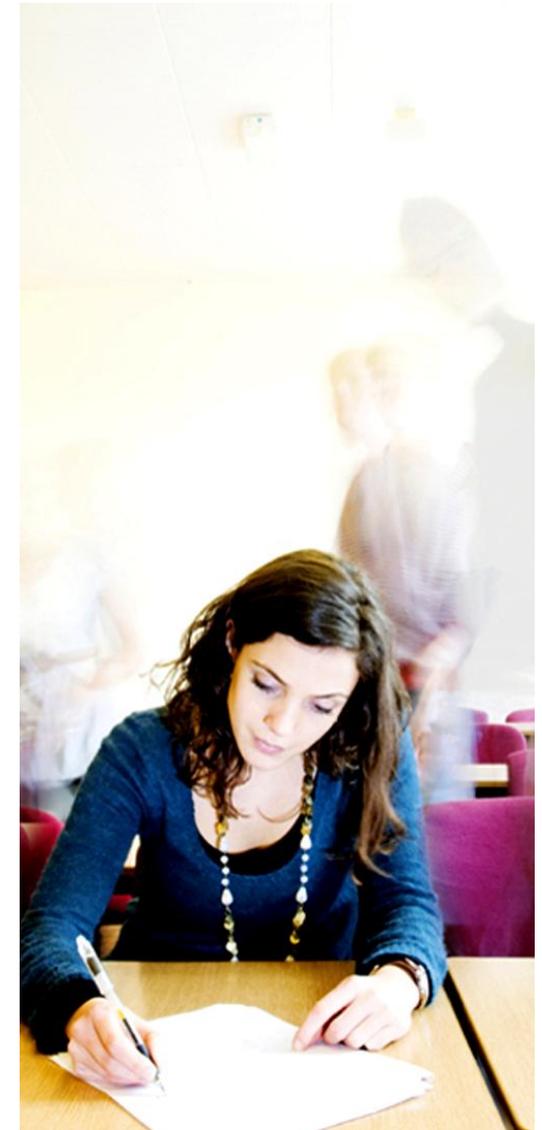
## The Learner's Perspective

When the learner is presented with CBM questions, a typical thought process might be:

- What other information do I know that can assist me in determining my level of certainty for this answer?
- When I answer a question correctly with high certainty, my level of confidence increases.
- The instructor will know that I am not only passing the test, but that I am certain in my answers.
- If I want to guess at a question, I'd better admit a level of uncertainty and review the course material again. If everyone is uncertain on this same subject matter, perhaps the material was not presented well.
- A highly confident answer that is wrong means that I need to pay closer attention and not rush judgment in the reliability of my answer. I will need to go back and review this material again.

How does CBM help learners?

- It encourages them to analyze all issues related to a question, not just the question alone.
- It helps them gain confidence by contemplating and identifying the reliability of their answers.
- It encourages them to analyze how much and how well they understand new concepts.
- It helps them identify misconceptions about their knowledge, allowing them to reflect on the concepts and better understand their misconceptions.
- It allows them to become active participants in the assessment process and, therefore, the learning process.





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*Want to learn more about  
Certainty-Based Marking?*

*Visit the following sites:*

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- ❖ ***Perspective on Certainty-Based Marking:*** *This in-depth audio interview with leading CBM researcher, Tony Gardner-Medwin, was originally published at [innovateonline.info](http://innovateonline.info).*
- ❖ ***Activator Methods Online:*** *Activator Methods International has created a new way to learn the fundamentals of the Activator Method using e-learning and CBM.*

## **The Organization's Perspective**

Why should your organization consider CBM as a strategy for assessing competence? Think about the following:

- It is risky to put high confidence / low knowledge employees in front of your customers or behind your products / machinery.
- You want your training program to assess learning, teaching and curriculum effectiveness with a high level of reliability.
- CBM challenges deeper knowledge; it goes beyond simple factual or associative learning.
- Using CBM reporting data, you will discover more about learners' needs and can adjust instruction to improve individual achievement and/or improve test questions.

By encouraging higher level thinking (analysis, synthesis and evaluation), you develop a stronger, more competent workforce.

## **Implementing CBM**

Certainty-Based Marking is an excellent tool for a variety of question types and delivery methods. You can use CBM with multiple choice, true/false, matching, fill in the blank, short answer, multiple select and essay questions. With a bit of custom programming and development work, you can establish the grading calculations and reporting to suit your individual needs. Before you roll out the tool and technology, however, be sure to plan an implementation and communication strategy. Learners must understand how to answer CBM questions and how to use the CBM information they receive to improve their assessment results.



If you would like to learn more about Certainty-Based Marking, feel free to [contact us](#). We'd love to tell you more about this innovative strategy and how it can improve your organization's assessment processes. Michaels & Associates — where the tingling sensation in your mind means it's working.

 [info@michaelsandassoc.com](mailto:info@michaelsandassoc.com)

 [www.michaelsandassoc.com](http://www.michaelsandassoc.com)

 toll-free: 877-614-8440

