



— a Learnosity company —



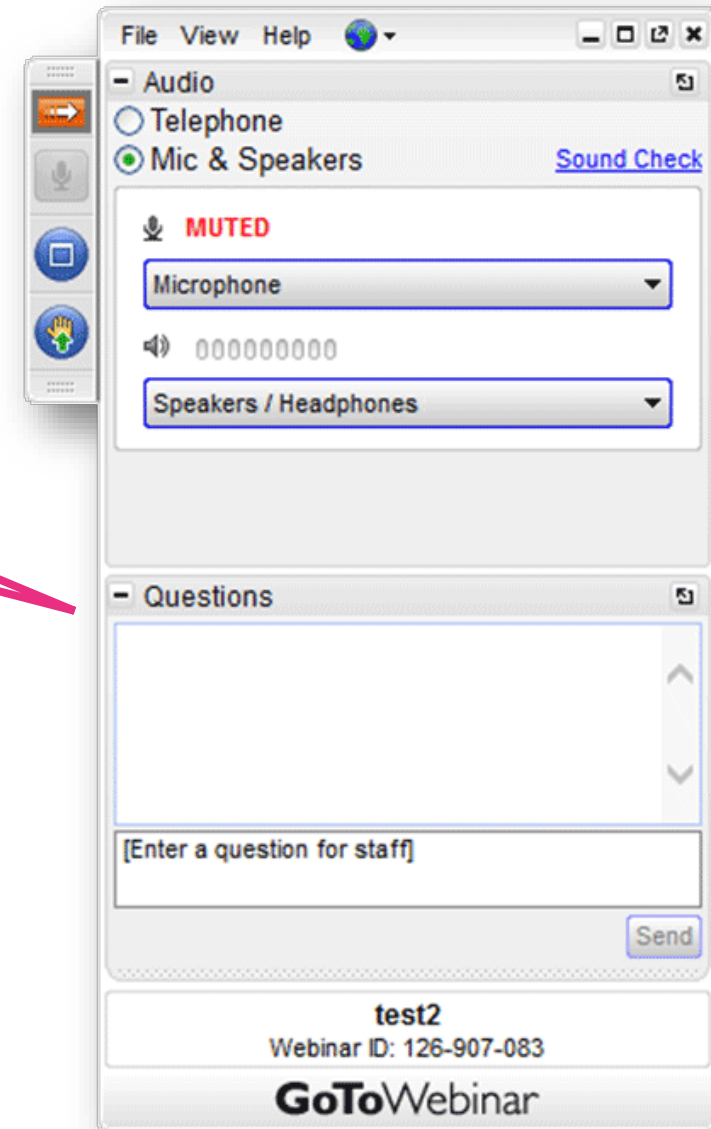
Beyond Recall: Taking Competency Assessments to the Next Level

John Kleeman, Questionmark

To ask questions,
use the “Questions”
feature

Watch for an email after the webinar:

- Download slides (PDF)
- View a recording



Presenter:

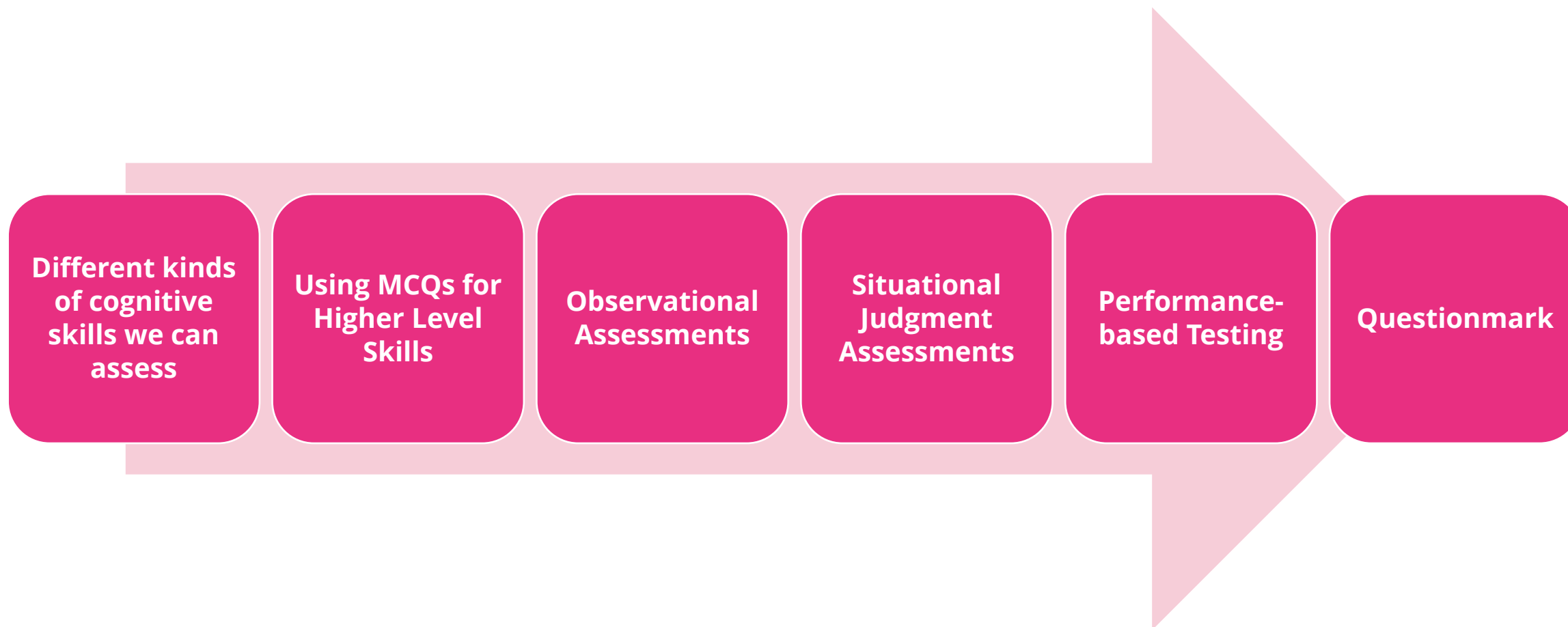
- John Kleeman MA MBCS CEng CIPP/E
- EVP at Learnosity, Founder of Questionmark
- Director of Association of Test Publishers (ATP)
- 30 years of experience in the assessment industry



Questions that ask for knowledge of facts can earn you a million but are not useful to many job roles



Agenda



What Can We Learn from Assessments?



Knowledge (a cognitive skill)

- Memory is a cognitive skills that provides ability to recall knowledge:
 - “Knowledge How”
 - “Knowledge To”

Above Knowledge Skills

- Cognitive skills above recalling knowledge (Comprehension, Application, Analysis, Synthesis, Evaluation and Judgment)

Ability to Do/Perform
“Competency”

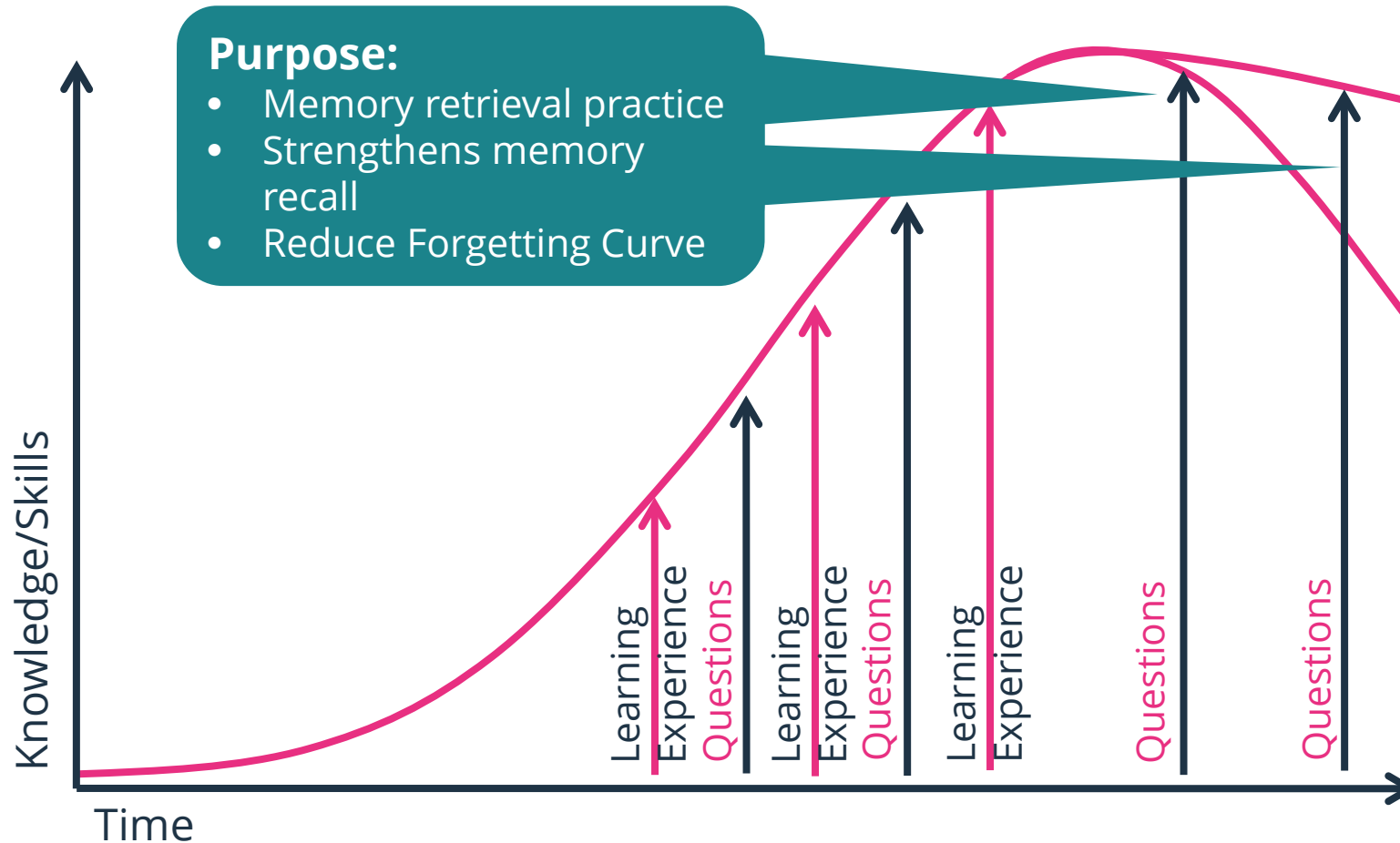
Observable Skills

- Motor Skills
 - i.e. physical movement/coordination
- Inter-personal skills

Behaviors & Attitudes

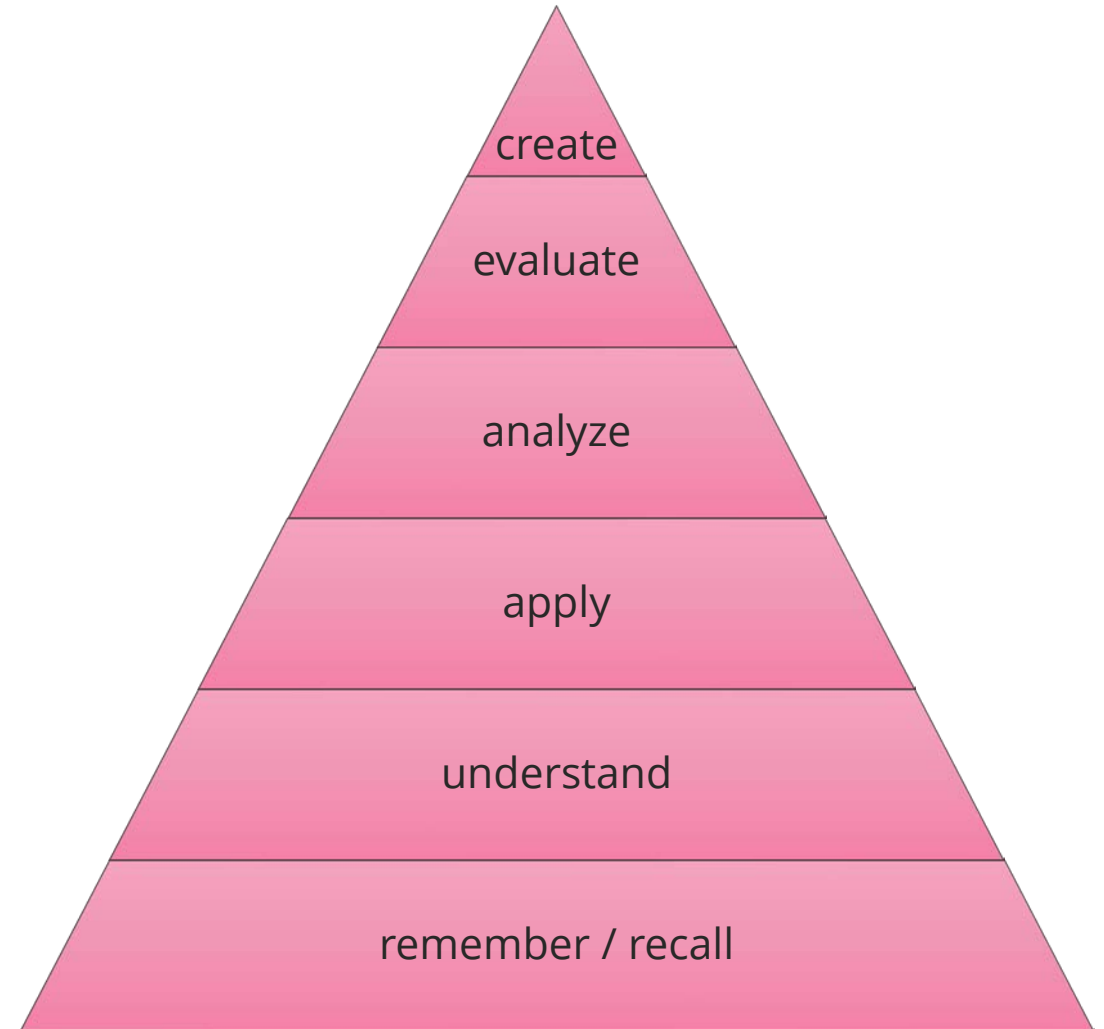
- Motivation
- Ability to achieve goals
- Team fit

Recall Questions Check Knowledge and Slow the Forgetting Curve



Recall Only Small Part of Job Requirements

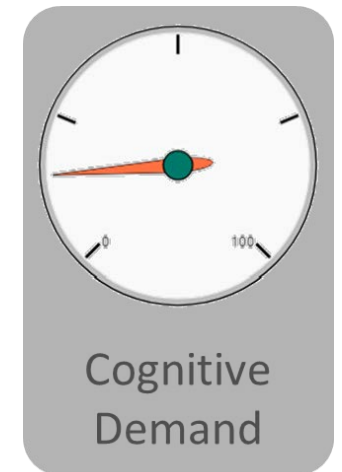
- Blooms taxonomy describes cognitive skills in levels
(revised version shown here)
- Most real-world jobs require many levels of taxonomy
- If your assessments focus only on recall, may well not test job competence



“Recall” Example

What does a yellow traffic light mean?

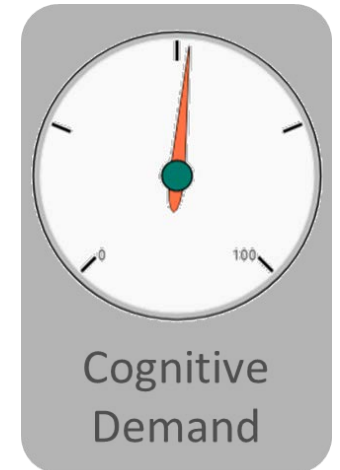
- a) Stop
- b) Go
- c) Caution
- d) Look behind



“Understand” Example

If you are driving toward an intersection and the light turns from yellow to red, what should you do?

- a) Speed up and cross the intersection
- b) Continue at the same speed and cross the intersection
- c) Stop suddenly
- d) Stop gradually

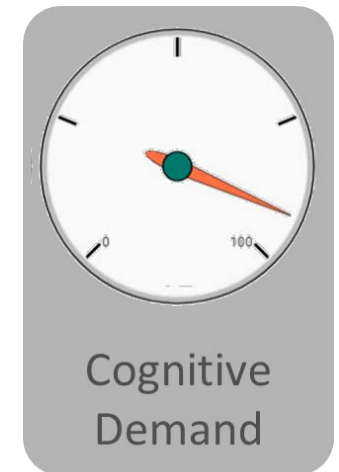


“Evaluate” or “Judgment” Example

You are giving a close friend a lift to work and because of traffic you are running 15 minutes late for an important appointment. You are driving toward an intersection with traffic lights on it. You can see the intersecting road to some extent and there seem to be no cars on it. The light turns to yellow as you approach. The car behind you sounds their horn and seems to be accelerating in the expectation that you are going to cross the intersection. Your friend tells you to put your foot down as you are running late and there are no cars visible on the intersection. What should you do?



- a) The road appears to be clear so speed up to exit the intersection as soon as possible
- b) Stay at the same speed and continue to cross intersection while keeping an eye out for crossing cars
- c) The light is about to turn red so you should stop immediately and ignore the car behind you
- d) Put your hazard lights on to signal to the car behind you and stop at the intersection if the light turns red
- e) Ignore your friend's irritation and move to the side of the road to let the other car pass



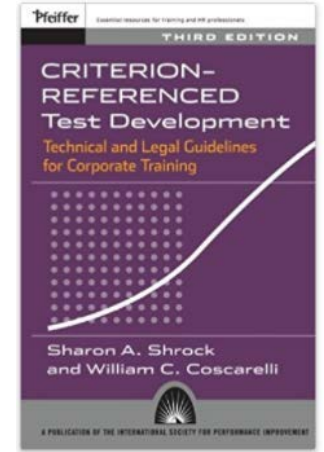
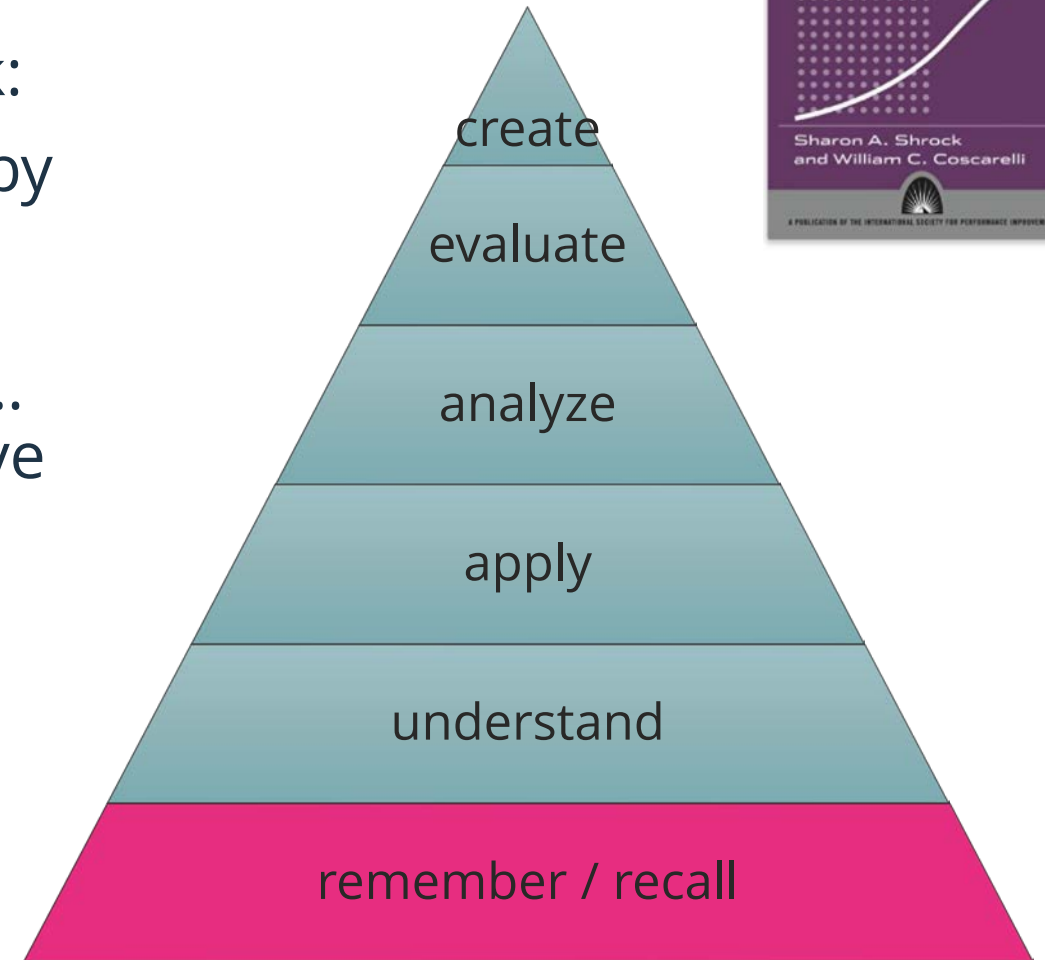
Quick Poll

Which cognitive levels do your questions mostly test?

- Remember/recall
- Understand and apply
- Analyze and evaluate
- A combination of different levels

Advice from the Experts

- William Coscarelli and Sharon Shrock:
 - Knowledge (recall) level items are by far the easiest to write.
 - Developing tests that truly reflect on-the-job performance requires ... writing items at the higher cognitive levels
 - **In general, single most useful improvement you can make in writing test items is to write them above the memorization level.**



Some Approaches to Testing Beyond Recall

**MCQs or other
objective
questions that
test higher
level skills**

**Observational
or workplace
assessments**


**Situational
Judgment
Assessments**

**Performance-
based Testing**



Using objective questions to test higher level skills

Writing Multiple Choice Questions to Test Higher Level Skills

- 
- Consider a question where multiple facts needed to answer, not just one fact
 - Include a scenario or rich context in question to put participants closer to the work environment. Videos can be helpful.
 - Analysis skills can be measured using charts and tables
 - Consider asking for “best” answer rather than “right” answer. Require analysis or other higher-level skills to choose best answer
 - Critical all distractors plausible

Example

(from Writing Multiple-Choice Test Items that Promote and Measure Critical Thinking, Morrison and Free. Journal of Nursing Education, Jan 2001)

Recall question

The nurse knows that which assessment finding is characteristic of a client with Parkinson's disease?

Recall

- A. Night blindness
- B. Pain in lower extremities
- C. Shuffling gait
- D. Incontinence

Analysis / evaluation question

The nurse is making a home visit to a 75-year old male client who has had Parkinson's disease for the past five years. Which finding has the greatest implication for this client's care?

Evaluation

- A. The client's wife tells the nurse that the grandchildren have not been to visit for over a month.
- B. The nurse notes that there are numerous throw rugs throughout the client's home.
- C. The client has a towel wrapped round his neck that the wife uses to wipe her husband's face.
- D. The client is sitting in an arm chair, and the nurse notes that he is gripping the arms of his chair.

Beyond Multiple Choice

- Other question types provide a very practical approach to testing, understanding, application, analysis and more
 - Matching
 - Knowledge matrix
 - Drag and drop
 - ...
- Also reduces chance to guess.
 - In a 4 choice multiple choice question, 25% chance of guessing.
 - In question to right 3% chance of guessing

2 of 3

Classify each statement as realistic or absurd.

- | | | |
|--------------------------------|---------------------------------|------------------------------|
| An aquatic mammal | <input type="radio"/> Realistic | <input type="radio"/> Absurd |
| A fish with a lung | <input type="radio"/> Realistic | <input type="radio"/> Absurd |
| A single-celled metazoa | <input type="radio"/> Realistic | <input type="radio"/> Absurd |
| A flatworm with a skeleton | <input type="radio"/> Realistic | <input type="radio"/> Absurd |
| A coelenterate with a mesoderm | <input type="radio"/> Realistic | <input type="radio"/> Absurd |



Observational Assessment

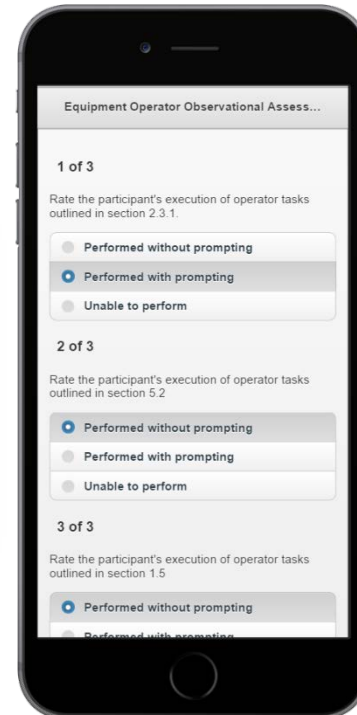
Observational Assessment



Observer “rates”
the participant

Rate the participant’s execution of operator tasks outlined in section 2.3.1.

- Performed without prompting
- Performed with prompting
- Unable to perform



Example Applications



Sales Training



Certification



Medical and Dental
(OSCE)



Equipment operation

Typical Workflow for “Observer”

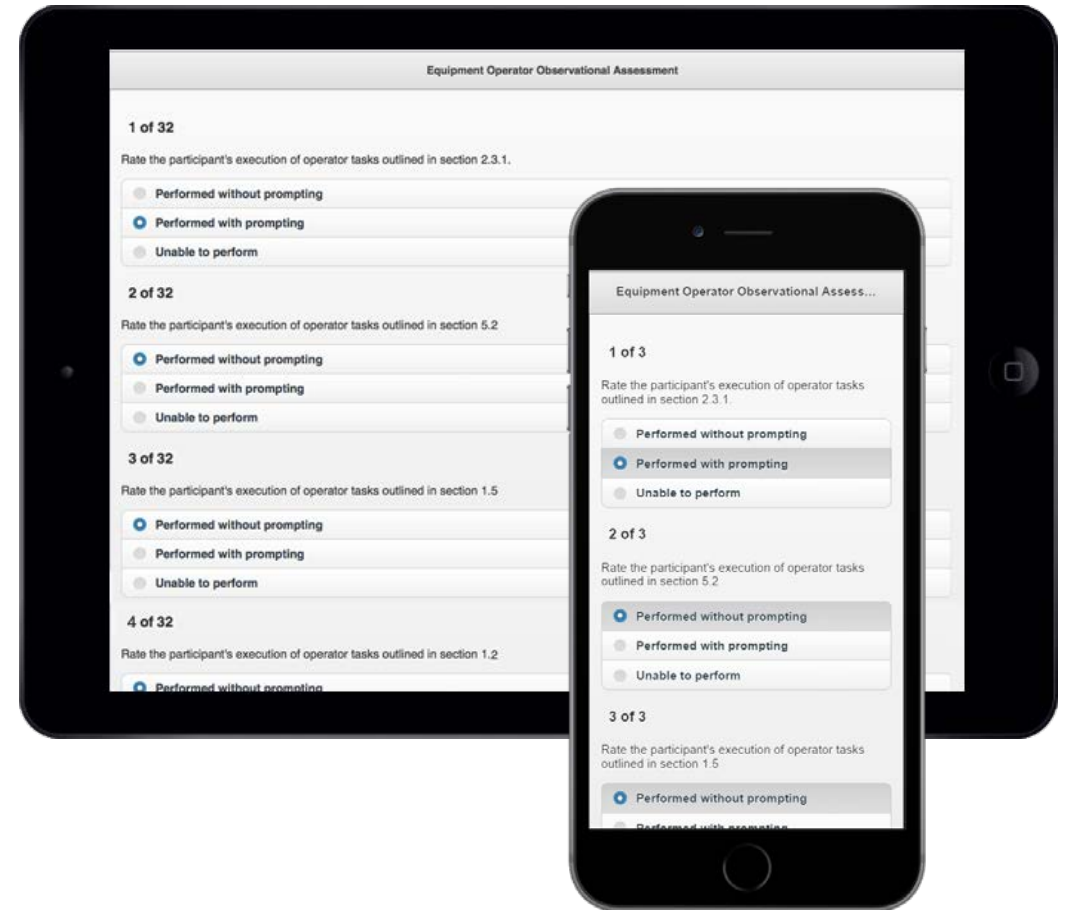
Monitor/observer logs in

Selects assessment

Selects participant to be observed

Answers/submits responses to questions

Results/feedback reported to stakeholders



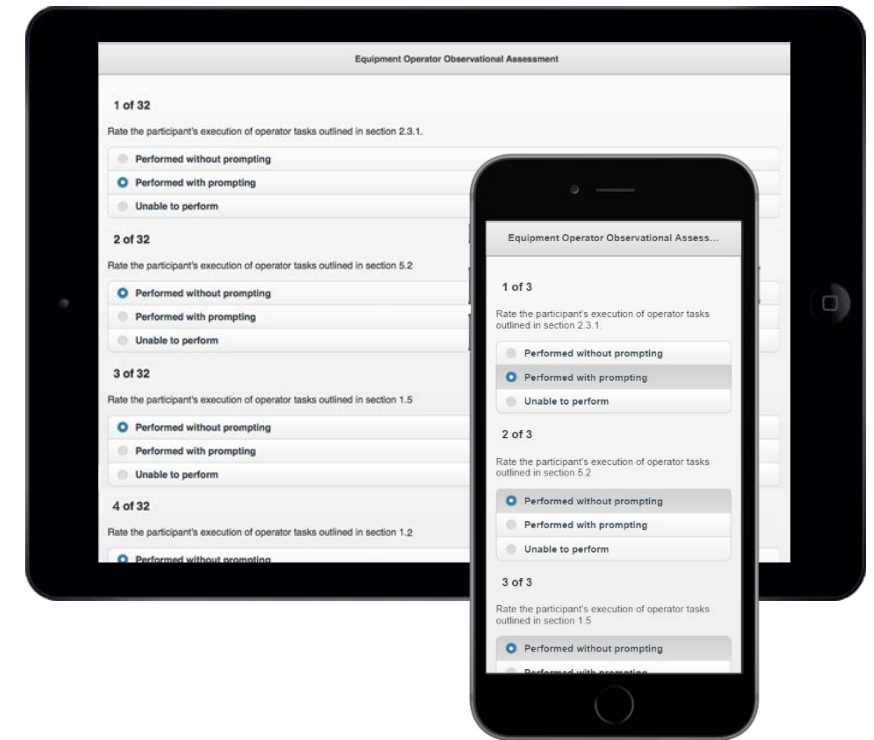
Getting Objective Ratings from Observational Assessments

Items typically solicit ratings for

- Performance of task(s)
- Demonstration of appropriate knowledge, skills, abilities, behaviors

Goal is to ensure ratings are objective as possible

- Keys to ensuring **reliability** of observational assessment results:
 - Establish consistent rating scales & scoring rubrics
 - Educate raters to ensure consistent understanding and application of rating scales





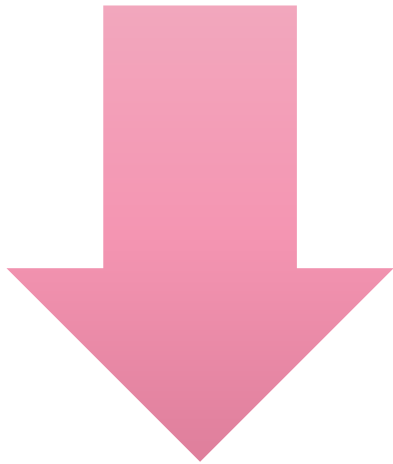
Testing Judgment

Why Judgment Matters (Ernst & Young)



Rules immensely important

- in defining the parameters within which teams and individuals should operate



Rules alone are not enough

- Whether and how they are adopted by people **when making decisions** that matters

“Judgment is at the heart of nearly every business scandal that ever occurred”

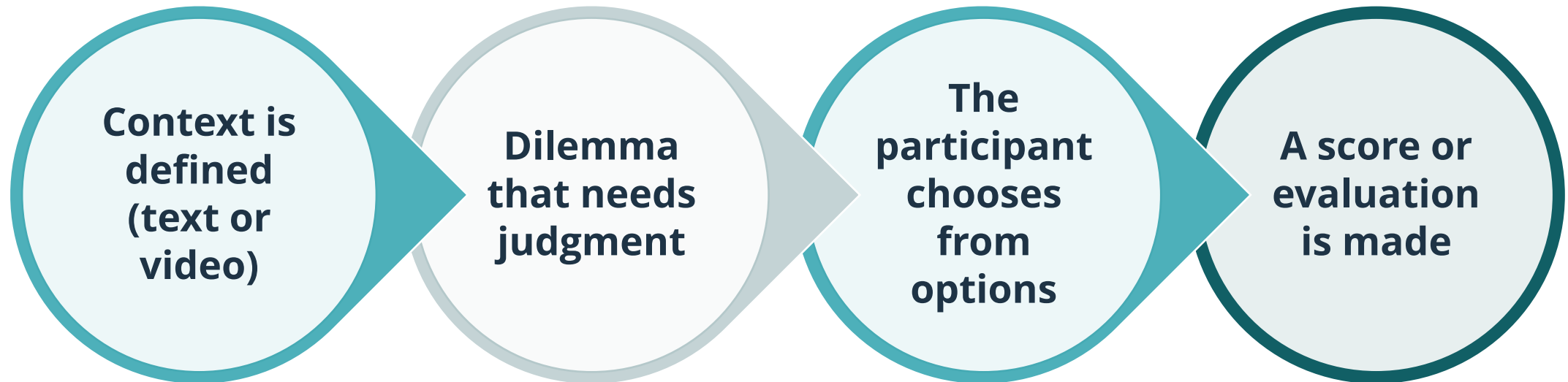


Assessing for Situational Judgment

- Almost all job roles require judgment
- Situational Judgment Assessments present work-relevant **dilemmas** with questions that require **judgments** about possible responses
 - Assessing how well participants can:
 - Recognize critical aspects of a situation and how they should be prioritized
 - Identify which actions/options are more vs. less likely to achieve objective
 - Determine which responses are more vs. less aligned with organizational expectations
 - Display the soft skills required work collaboratively with colleagues to overcome obstacles and achieve desired outcomes
 - Deal with dilemmas in which there are no clear 'positive outcomes' -- or in which available information may be ambiguous



Structure of Situational Judgment Assessment (SJA)



Example SJA Question – Appropriate Judgment in Retail

You work in a retail store. You have been tasked with refilling a lot of shelves before mid-morning when the store gets busy with customers. A customer has accidentally broken a bottle of cooking oil. There is broken glass and the oil is quickly spreading across the floor. The customer seems very upset. Other customers are approaching the area where there is broken glass and oil on the floor. One of your colleagues is helping the customer. **What should you do?**



Make a judgment

- Watch your colleague for a moment to see if your help is needed
- Help your colleague deal with the situation by calling the cleaning staff
- Stay focused on completing your current task of re-filling the shelves in time

Applications of Situational Judgment

Pre-hire

- Realistic job preview – help applicant and employer work out job fit

Post-hire workforce development

- Diagnosing training needs
- As training with feedback
- Post training assessment
- Measurement of soft skills
- Safety / risk mitigation

Post-hire compliance

- Assess judgment of workforce
- Survey what people in organization would do in dilemmas
- Spot possible problems and mitigate risk

Certification

- Many high-tech certification programs criticized for being too focused on basic knowledge, not enough on important job skills
- SJAs provide a practical and inexpensive way of testing judgment

Benefits



Genuinely measures judgment fairly and legally defensibly

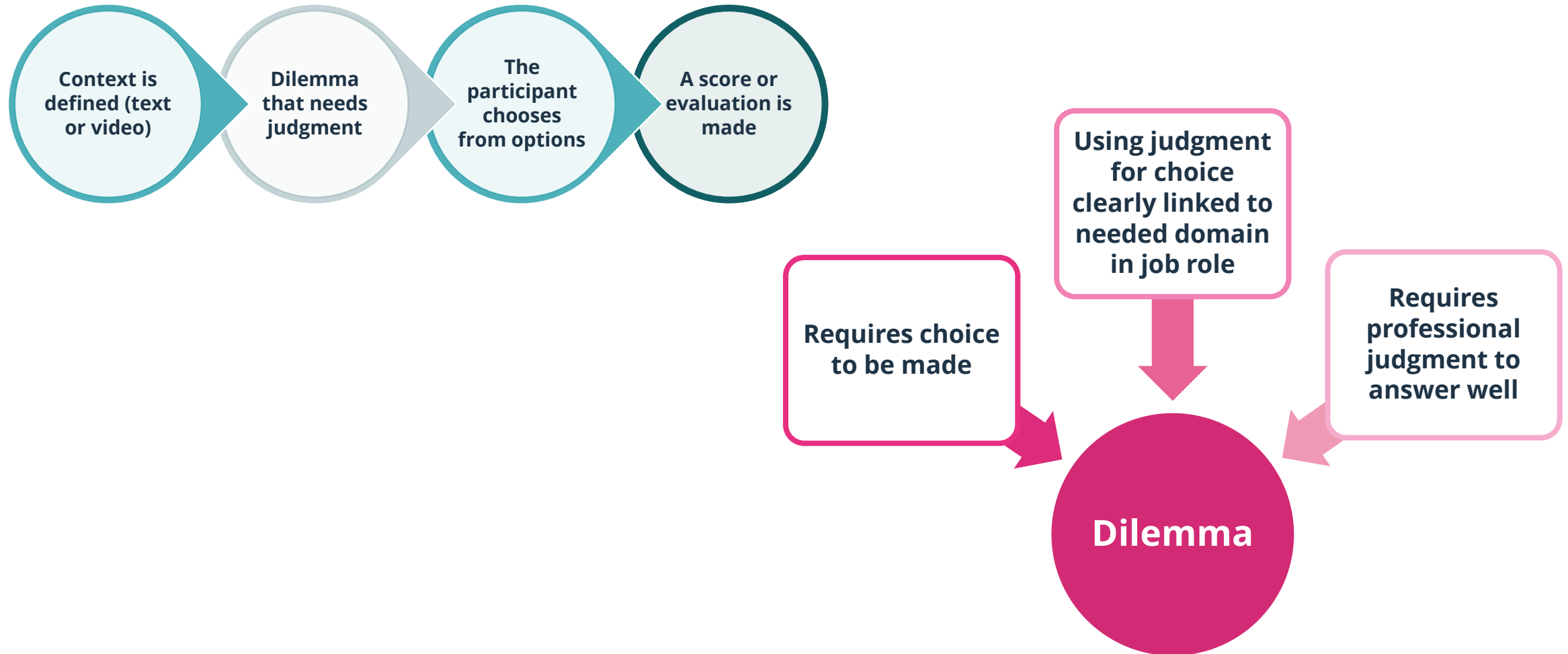


Lower cost compared to many other approaches



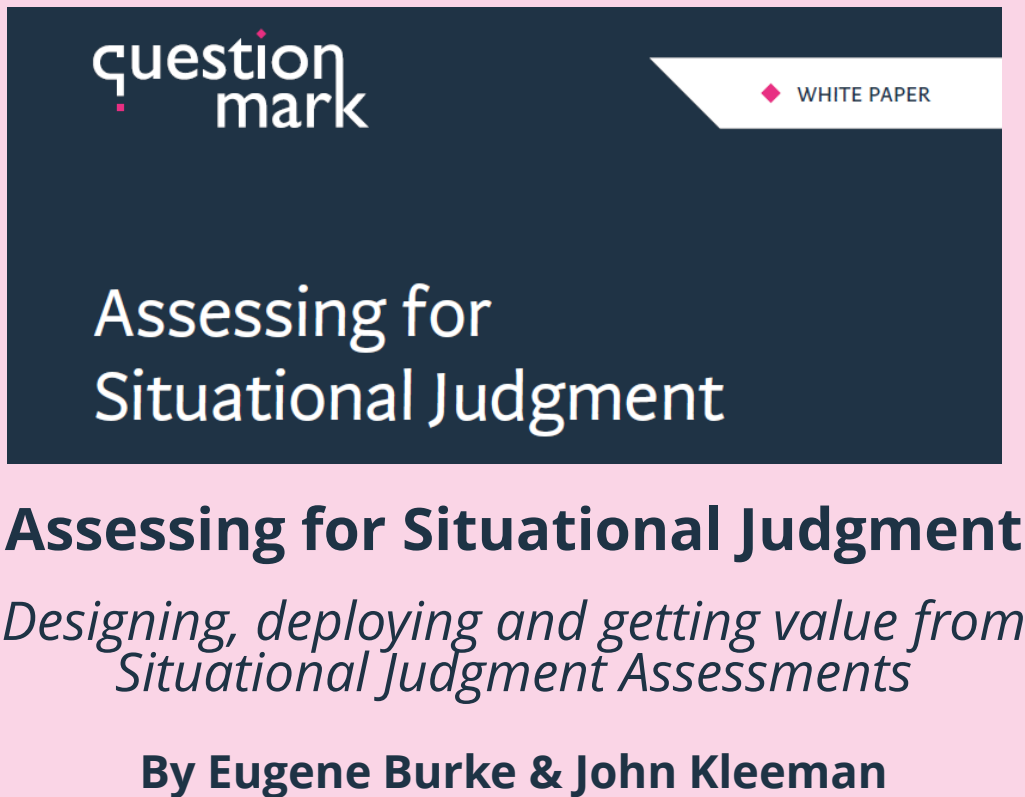
Scalable – can delivered widely

SJA – an Effective Means of Testing Judgment



To Learn More on SJAs, See our White Paper:

Assessing for Situational Judgment



40-page white paper provides:

- Overview of Situational Judgment Assessments (SJAs)
- Benefits and applications of SJAs
- Techniques for creating and validating SJAs
- Example SJA items to illustrate key concepts

<https://www.questionmark.com/resources/whitepapers/>



Performance-based Testing

What is Performance-based Testing?

Measure practical IT skills

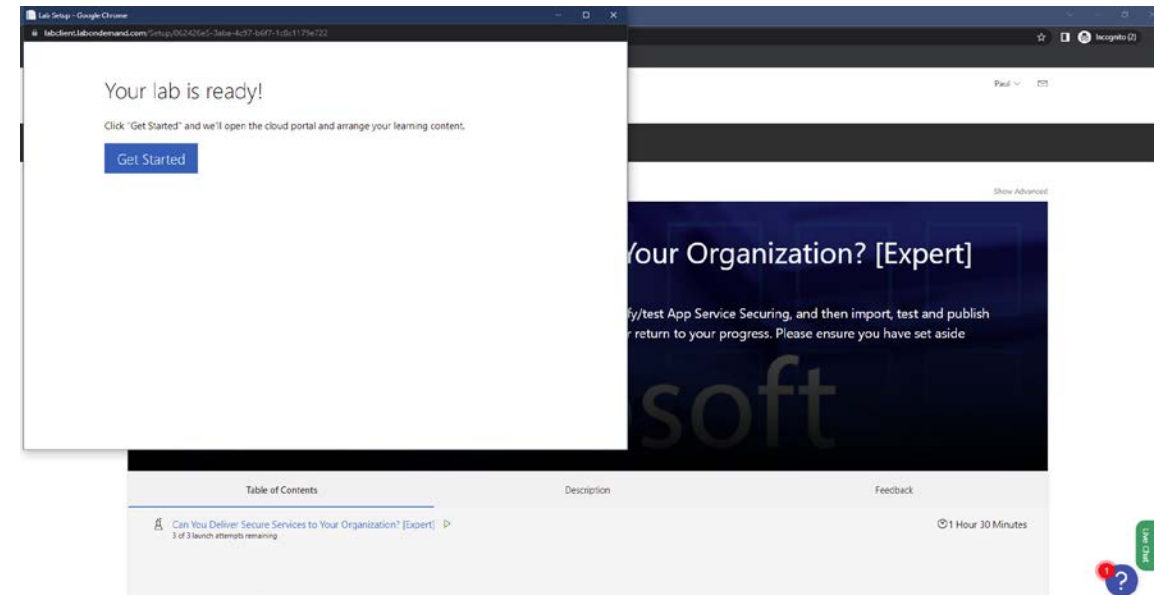
- Windows / Linux
- AWS / Azure
- Software applications

Uses a live virtual machine “lab”

- Preconfigured for practical task
- Test-taker can take own approach
- Scores whether task is completed well

Validates by doing

- Ensures someone can do a task
- Measures genuine performance
- Near impossible to guess



Questionmark Partnering with skillable

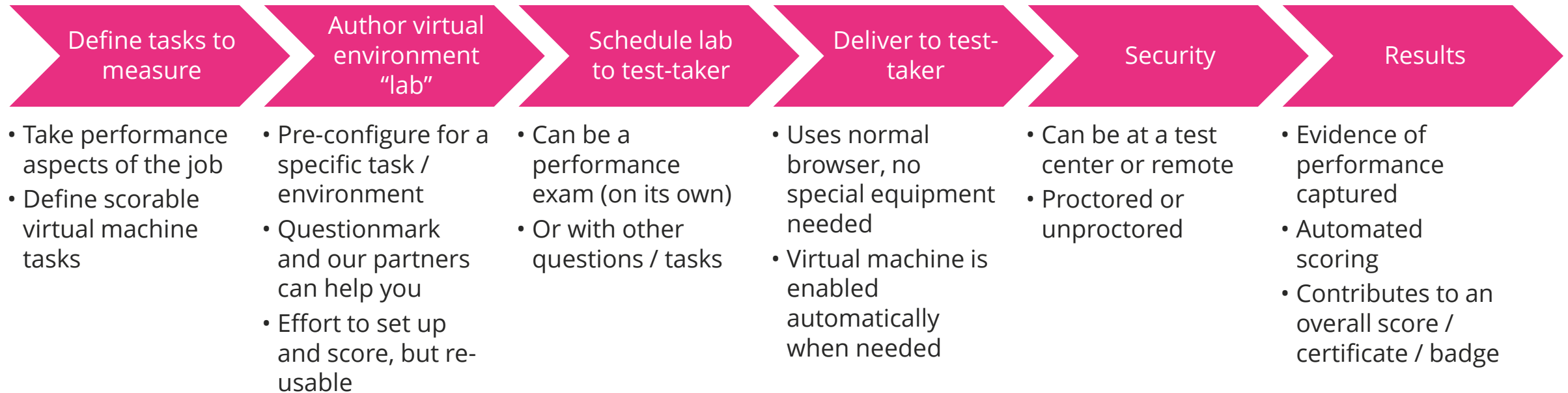
- Questionmark has partnered with Skillable for Performance-based Testing
- Skillable
 - Inc 5000 company
 - On Training Industry's 2021 Watch List
 - Provides PBT to Microsoft, Amazon and IBM and many others
 - Leader in the field
- The benefits of Performance-based Testing with Questionmark
 - Authentic lab environments for accurate skill assessment
 - Protect against test fraud
 - Scale your organization
 - Manage tests with ease
 - Grow and globalize
 - Enjoy high-value certifications



Scored Labs Elevate a Training or Certification Program



How do Scored Labs Work?

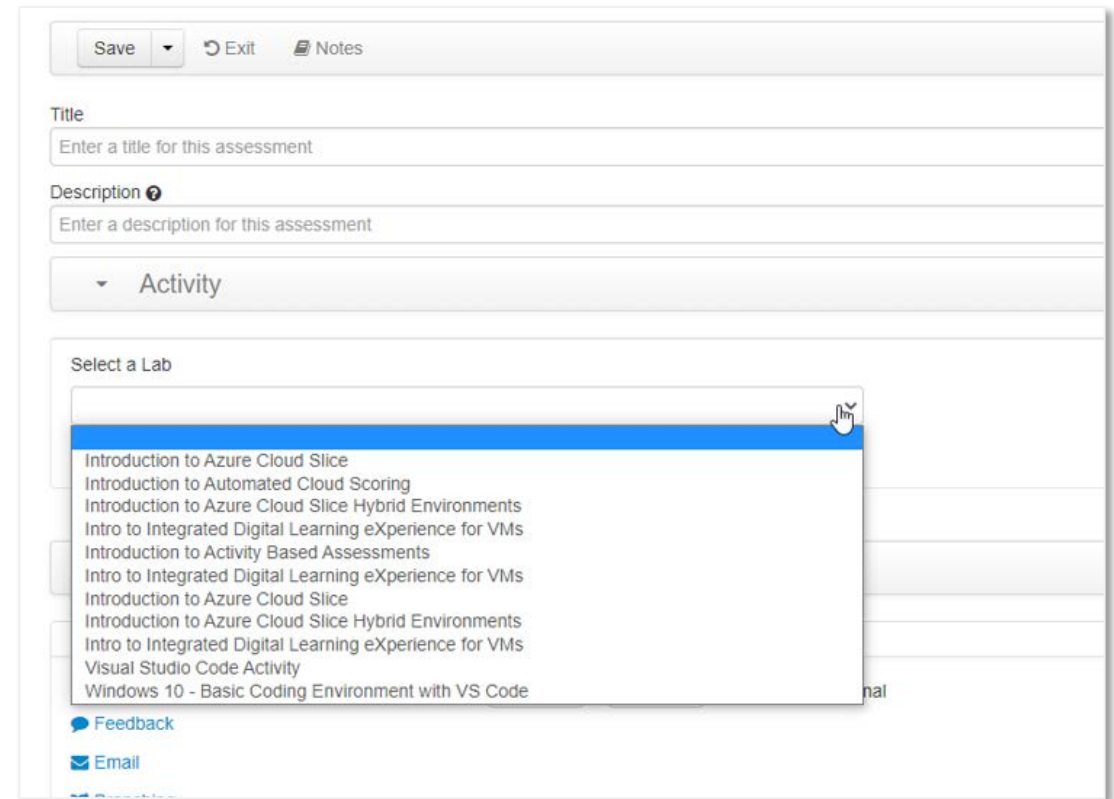
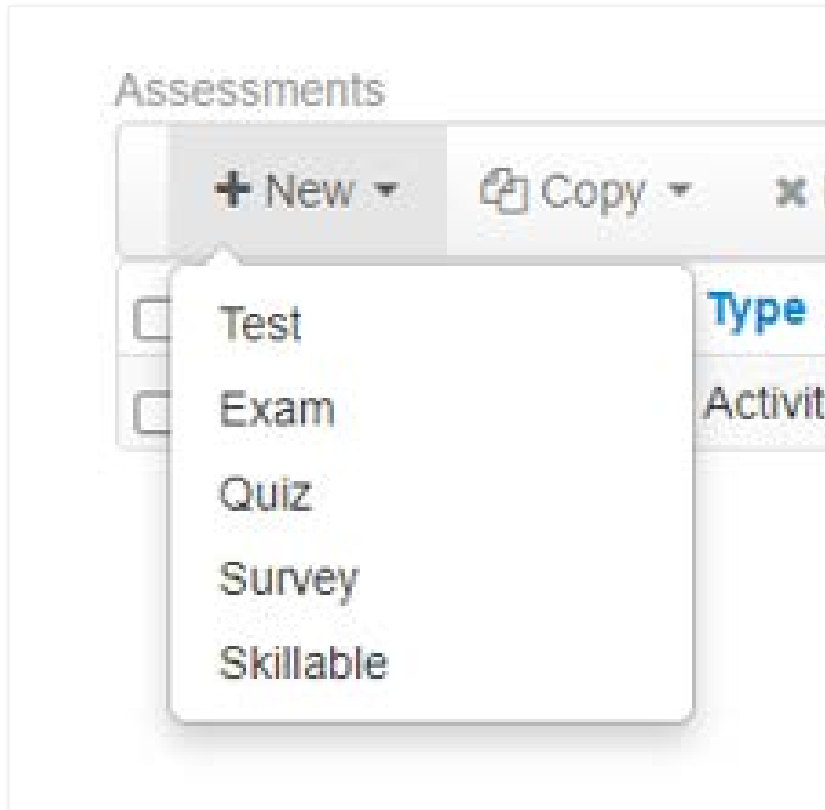


Performance Assessment with Skillable

- Hands-on virtual lab environments for training and IT skills validation
- Can require participant to
 - Perform task or series of tasks
 - Answer questions
- Lab captures activities, responses for scoring
- Integrating with Questionmark enables customers to centralize
 - Scheduling of assessments and Skillable activities
 - Results from assessments and Skillable activities

<https://www.questionmark.com/performance-testing-with-questionmark/>


Setting up in Questionmark



Participant launches activity from “My Assessments”

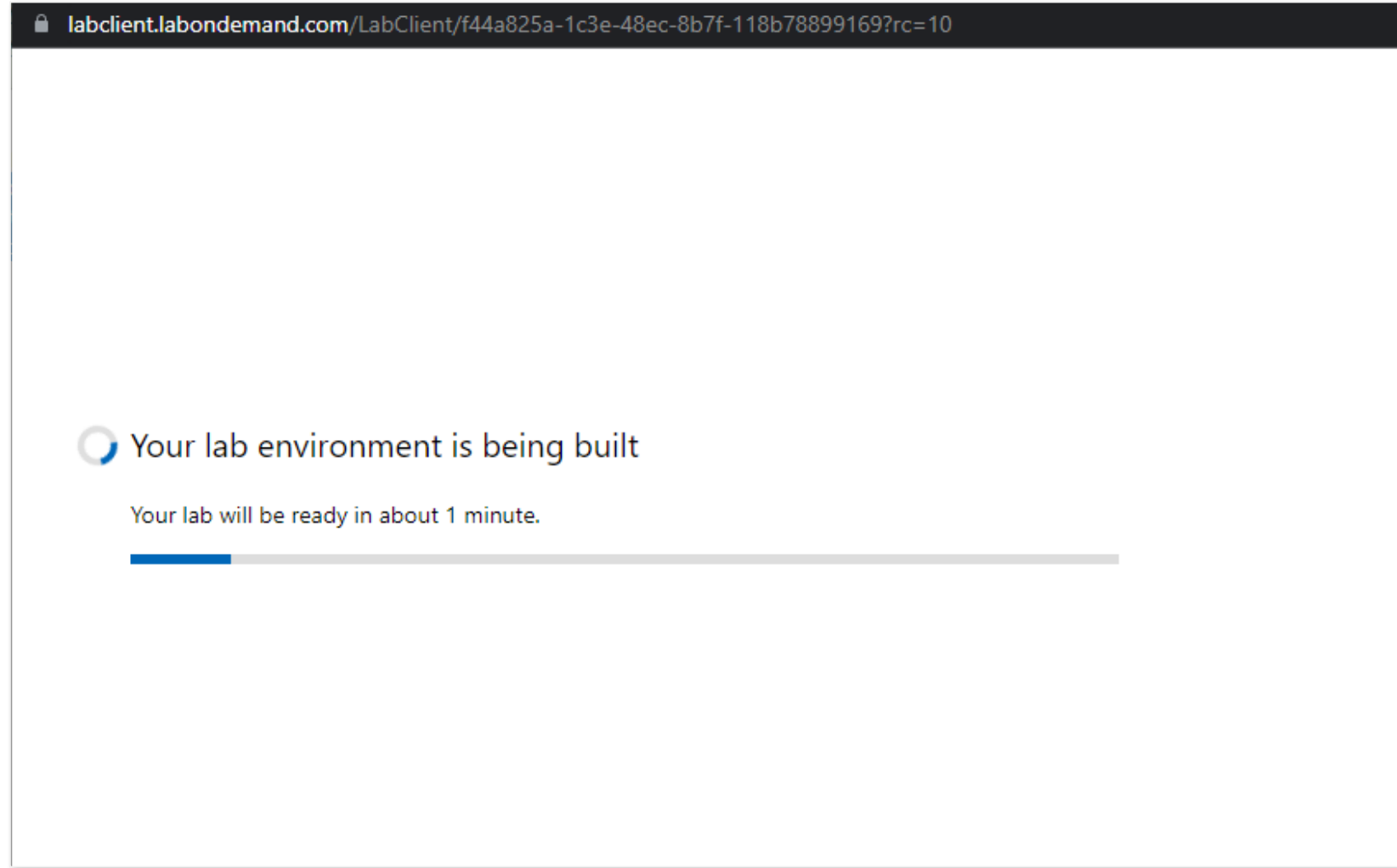
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My Assessments

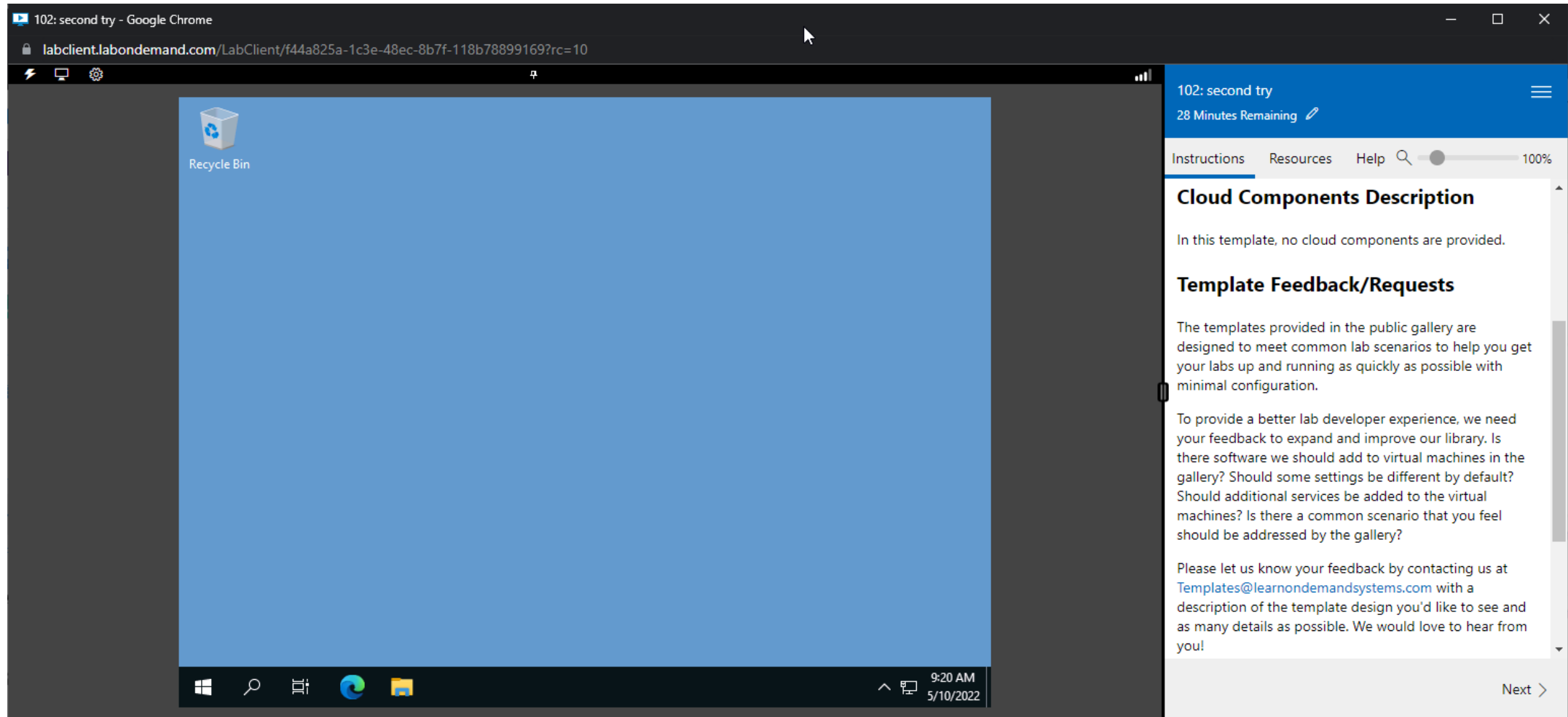
Name	Attempts left	Available from	Delivery	Actions
SkillableTest1	Unlimited		Automation_Proctoring Online: Examity	

Go to My Assessments p

Lab environment is created on the fly



Participant enters lab



Performance-based Testing Results

- Map into Questionmark reports



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“We’ve always centered our exam questions primarily from the application level of Bloom’s Taxonomy, where scenario-based testing is the practice. PBT adds a dimension that not only confirms a candidate knows what to do but can also demonstrate it.

[PBT] has elevated the integrity of the certification program and has also elevated the preparation of candidates, knowing that they may potentially get a PBT item in their exam.”

-- Comment from Major IT Company who Uses Performance-based Testing (PBT) in Certification Exams

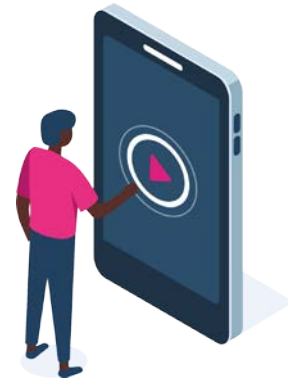
Performance-based Testing

Pros

- Increases integrity of a certification/testing program
- Genuinely tests performance
- Guessing near impossible
- Even if the content is shared or stolen, test-takers still need the skill to perform the task
- May encourage test-takers to learn/practice
- Can be combined with other kinds of questions

Cons

- Only applicable for IT tasks
- Extra effort to author and maintain labs
- (Small) cost to run virtual machines in every test

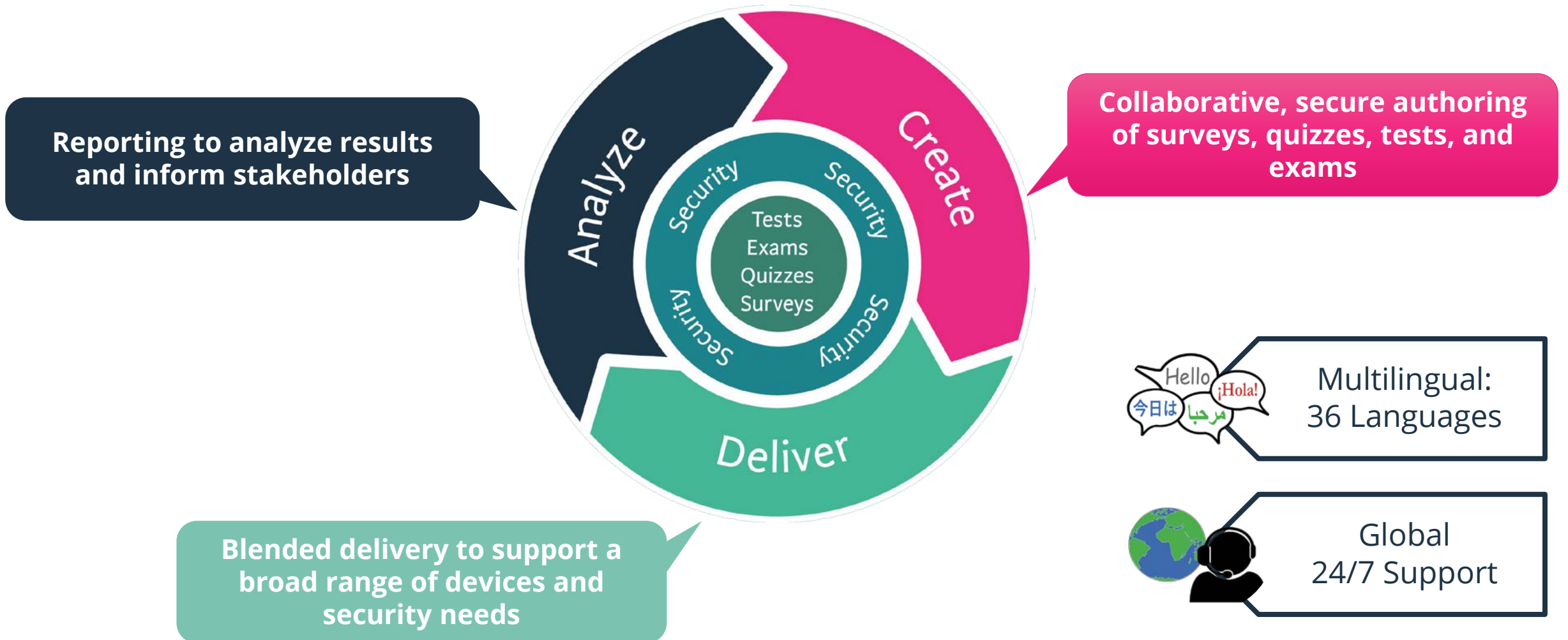




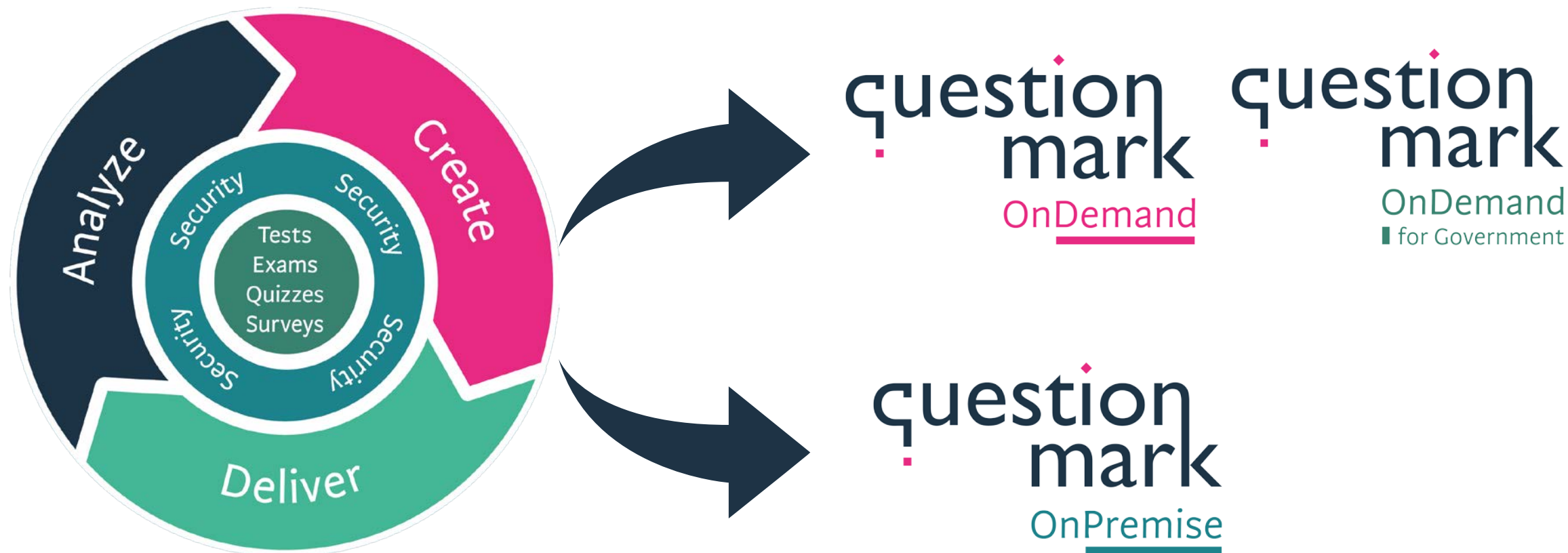
How Questionmark Can Help

A reliable, secure, scalable assessment management system for assessments

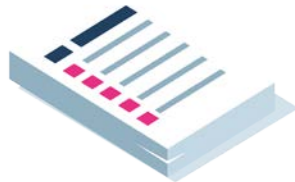
Questionmark Assessment Management System



Deployment Options



How Customers Use Questionmark to Enable Better Assessments, Informed Decisions & Defensible Results



Measure and Enhance Learning

- Measure knowledge, skills and attitudes – before, during and after learning
- Correct misconceptions and increase knowledge retention

Qualification and Certification

- Deliver reliable, defensible tests to certify employees
- Ensure sound personnel decisions

Regulatory Compliance

- Ensure knowledge of essential laws, regulations and health/safety guidelines
- Demonstrate compliance and reduce risk

Sales/Technical Expertise

- Competence/product expertise of sales and technical professionals
- Increase revenues, customer satisfaction
- Reduce costs

Credentialing

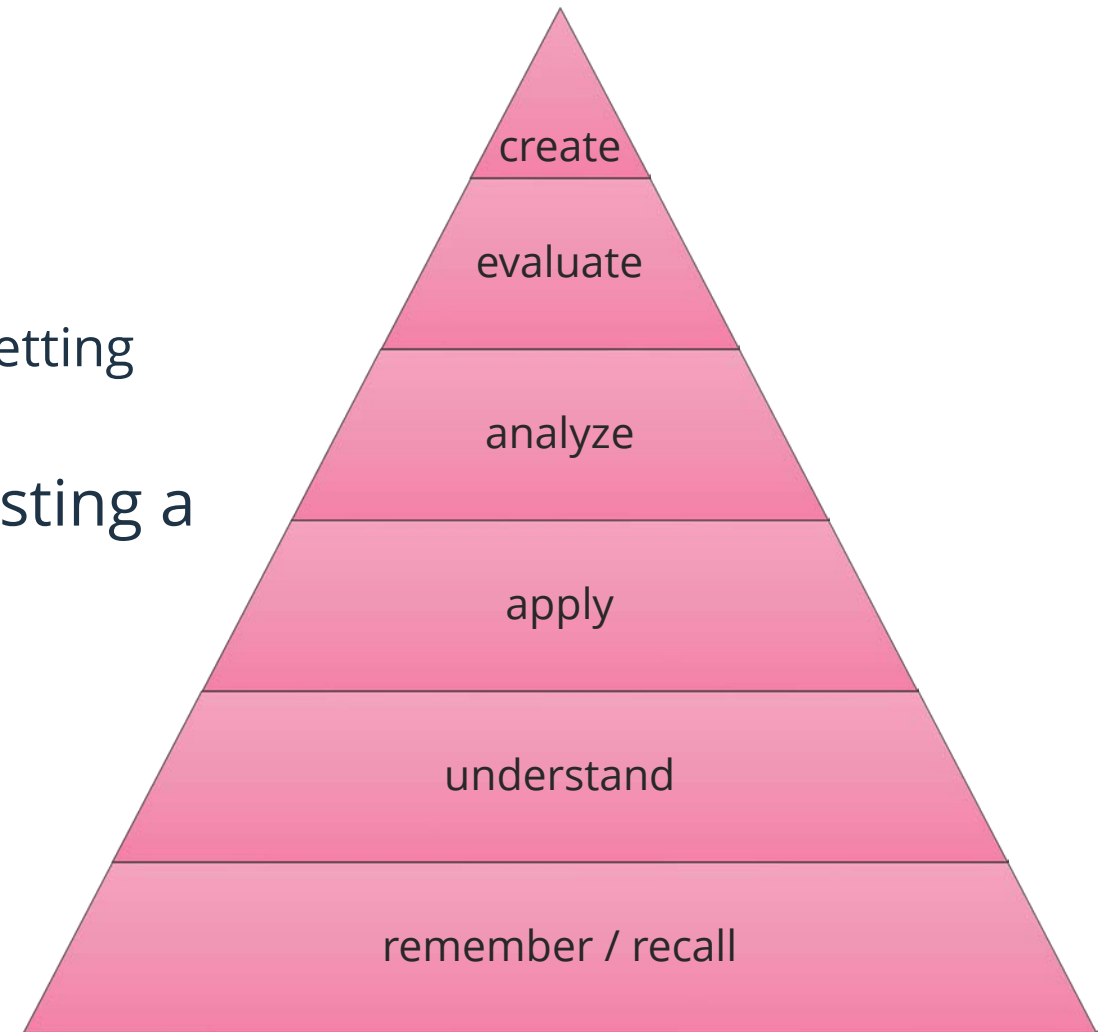
- Efficiently create and maintain valid, reliable tests
- Generate revenue from exams and practice tests

Higher Education

- Higher Education
- Increase student satisfaction
- Reduce cheating
- Improve learning outcomes

Beyond Recall

- Assessments that test recall:
 - Check someone's knowledge
 - Give retrieval practice which reduces forgetting
- Competence in most jobs requires testing a lot more than recall:
 - Testing higher level cognitive skills
 - Testing practical skills (observational assessments)
 - Testing judgment (SJAs)
 - Performance-based Testing

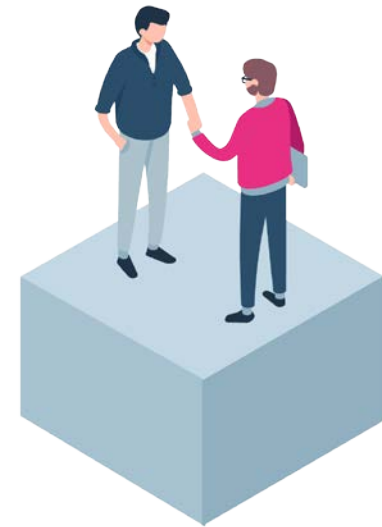


How to Evaluate Questionmark

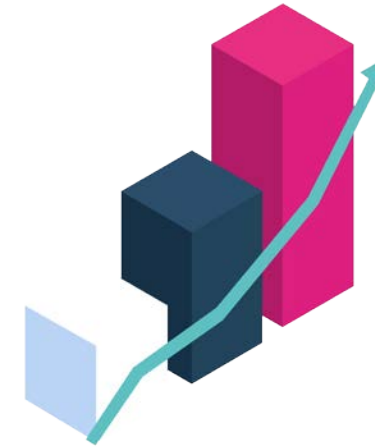
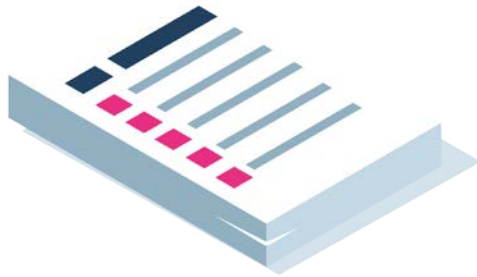
Request a one-on-one demo

The Questionmark team will contact you to arrange a demonstration tailored to your needs and questions

www.questionmark.com/request-demo



White Papers, Infographics, Reports, eBooks and More!



READ NOW: [Assessing for Situational Judgment](#)

Upcoming Webinars

Introduction to Questionmark's Assessment Platform

◆ September 8, 2022 - 12:00 pm to 1:00 pm (EDT)

Learn the basics of authoring, delivering and reporting on surveys, quizzes, tests and exams using Questionmark's assessment platform.

[Click to Register](#)

Tuesday Training with the Techs: Building Report Rapport – Customizing Reports

◆ September 20, 2022 - 11:00 am to 12:00 pm (EDT)

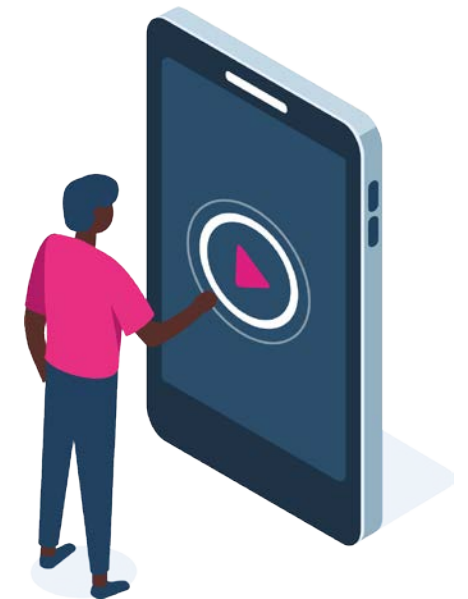
Learn how to create, customize, and run reports that analyze assessment results held in the Questionmark database.

[Click to Register](#)

Setting a Cut Score – What's Fair and What's Not?

◆ September 27, 2022 - 11:00 am to 12:00 pm (EDT)

Join us as our consulting partner, Jim Parry, Owner and Chief Executive Manager of Compass Consultants, LLC discusses the importance of setting a fair, defensible cut or passing score for tests and assessments.

[Click to Register](#)



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Your Questions?





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Thank you for attending!

We hope to see you at a future webinar

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