Can you prove it?

Seven Ways Assessments Fortify Compliance

John Kleeman
Executive Director and Founder
Questionmark

Brian McNamara
Marketing Director
Questionmark
To ask questions, use the “Q&A” feature
Why are we holding this webinar?

Banks fined £2bn over forex scandal

Auto Manufacturer to Spend $14.7 billion to Settle Emissions Case

Bank Fined US$185 Million over unauthorized accounts

OSHA Set to Increase Penalties in 2016 – Some fines to Increase more than 80%

Roofer's first-day injury costs Florida contractor $152K OSHA fine

Universities fined millions for how labs how their labs managed chemical waste

EPA fines Company $1.2 million for selling misbranded pesticides

Pollution Settlement to Cost Motorcycle Manufacturer US$12 Million
About Questionmark

Background

- Founded in 1988
- Offices in US, UK, Canada; Partners worldwide
- Assessment technologies and portal solutions that enable organizations to measure knowledge, skills, and attitudes securely for certification, regulatory compliance and improved learning outcomes.

Customers

- Customers worldwide in Corporate and Government (Learning/HR function);
  Higher Education; Awarding Bodies and Test Publishers
Assessment Management System

- Reporting to analyze results and inform stakeholders
- Collaborative, secure authoring of surveys, quizzes, tests, and exams
- Blended delivery to support a broad range of devices and security needs
- Multilingual: 36 Languages
- Global 24/7 Support
- Data Centers in US and Europe
Types of “assessments”

**Quizzes, Tests, Exams**
- Questions and scoring algorithms
- Scores and feedback at question, topic and assessment level

**Surveys**
- Questions relate to a person’s opinions on a topic
- Conclusions drawn based on analyzing frequency of responses
- Course evaluations, employee attitude surveys

**Observational Assessments**
- Someone assesses or rates a person’s performance, knowledge, skills, and abilities
How our customers use assessments

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 Channel Verification
- Ensure competence and product knowledge of sales professionals
- Increase revenues and customer satisfaction

Technical Channel Verification
- Ensure competence and expertise of technical and service professionals
- Reduce costs and improve customer satisfaction

Credentialing
- Efficiently create and maintain valid, reliable tests
- Generate revenue from exams and practice tests
Seven Ways Assessments Fortify Compliance

John Kleeman
Executive Director and Founder
Questionmark
7 reasons why assessments fortify compliance

- Regulators encourage them
- Demonstrate commitment
- Find problems early
- Document understanding
- Increase knowledge retention
- Reduce costs and training time
- Reduce human error
Reason #1: Regulators encourage them
Some examples

- **US FDIC:**
  - “Once personnel have been trained on a particular subject, a compliance officer should periodically assess employees on their knowledge and comprehension of the subject matter.”

- **WHO good manufacturing principles**
  - “Continuing training should also be given, and its practical effectiveness periodically assessed.”

- **US Department of Health & Human Services**
  - “Contractors should consider using tests or other mechanisms to determine the trainees’ comprehension of the training concepts presented.”

- **UK FSA (now FCA)**
  - “where staff understanding has not been tested, it is hard for firms to judge how well the relevant training has been absorbed”
Reason #2 : Demonstrate commitment
Why is it important to demonstrate top level commitment?

- Because employees follow their leaders
  - Charles Jennings (August 2012)

“... common thread that runs through almost all high-profile compliance catastrophes. It is that the top-tier executives and middle managers in the organisations simply don’t model the behaviours that will lead to a culture of compliance”
How do assessments demonstrate commitment?

- If you require all employees **and managers** to
  - Take assessments every 6 or 12 months
  - Remedial training and retake assessment if fail
- Assessments seen as fair
- Major stride in demonstrating commitment
Prosecutors also should determine whether the corporation's employees are adequately informed about the compliance program and are convinced of the corporation's commitment to it. This will enable the prosecutor to make an informed decision as to whether the corporation has adopted and implemented a truly effective compliance program.
2014 SCCE survey suggests widespread use of assessments for codes of conduct

Which methods do compliance function use to measure effectiveness of Code of Conduct?

- Employee compliance knowledge assessments: 50%
- Employee culture of integrity and compliance surveys: 50%
- Other: 20%
- Tracking code communication initiative dates against employee reports: 10%
- Employee focus groups: 10%
- Tracking employee utilization of code resources on intranet: 5%
- Tracking code release dates against employee reports: 5%
Reason #3 : Find problems early
How tests/quizzes/exams can find problems early

- Look at topic and assessment scores
  - By department
  - By geography
  - Over time
- Look at wrong answers
- Look at test failures
- Assessments touch every employee: a unique tool
How surveys can find problems early

- Surveys identify issues in culture and ethics
- Most employees want to help. From employee of bank involved in 2012 LIBOR scandal:
  
  “Always happy to help, leave it with me, Sir”.
- UK Ministry of Justice Bribery Act Guidelines
  “Staff surveys, questionnaires and feedback from training can also provide an important source of information on effectiveness and a means by which employees and other associated persons can inform continuing improvement of anti-bribery policies”. 
Reason #4: Document understanding after training
Why document training for compliance?

► Because regulators require it
  ▪ common regulatory requirement, e.g. OECD recommends on ethics/compliance programme:
    “measures designed to ensure periodic communication, and documented training for all levels of the company”

► Because makes business sense
  ▪ Trained employees more effective
  ▪ “If you can not measure it, you can not improve it.”
Common Methods of Documenting Training

- Take attendance
- Get employee signatures
- Test to check understanding
Take attendance

- **Pros**
  - Easy to do
  - Measures who turns up

- **Cons**
  - Did they stay the whole time?
  - Did they pay attention?
  - Did they get it?
Get employee signatures

Pros

- Gets employee confirmation
- Employee committed to follow rules

Cons

- People may sign but not take seriously
- People may sign without attending or understanding
Does getting an employee to sign give legal protection?

- Not where safety is involved, according to 2005 United States Appeal Court:
  
  “merely having an individual sign a form acknowledging his responsibility to read the safety manual is insufficient to insure that the detailed instructions contained therein have actually been communicated.”

  - Complete General Const. Co. v. OSHRC, 2005 U.S. App. LEXIS 5197 (6th Cir.), March 29, 2005
Test to check understanding

Pros
- Genuinely check understanding
- Allows improvement of weaknesses
- Feedback to improve training

Cons
- More effort
- You have to follow through & take action on failures
September 2016: Large bank fined ...**but also** ordered to bring in an independent consultant to review various things including:

“whether Respondent’s employees are *required to undergo training reasonably designed to prevent Improper Sales Practices* and other sales-integrity violations; *whether such training is adequate, complete, and timely updated*, provided when employees join Respondent, and repeated at sufficient recurring intervals during their employment to reinforce such training; whether *training records are complete, accurate and adequate*”

**ADMINISTRATIVE PROCEEDING 2016-CFPB-0015**
Reason #5: Increase knowledge / reduce forgetting
Compliance Training

Receive information
Working memory
Long term memory
Training useful if can retrieve

- Research shows retrieval practice helps future retrieval
- Successful retrieval modifies memory making it more retrievable in future
Roediger & Karpicke experiment 2006

- 120 students divided into groups randomly
- Given reading comprehension passages used in TOEFL
- Some students
  - Study for 14 mins
- Some students
  - Study for 7 mins
  - Recall material for 7 mins
- Compared results after 5 mins and 1 week
How much learners retained

- After 5 mins
- After 1 week

- Restudy
- Quiz
Learning in the Actual World
They don’t get it All!
Learning Curve

Purpose:
• Content repetition
• Memory retrieval practice
• Strengthens memory recall

Ouch! The Forgetting Curve
In the Actual World
They Forget It!
Slow the Forgetting Curve

Purpose:
• Memory retrieval practice
• Strengthens memory recall
• Reduce Forgetting Curve
Reason #6: Reduce cost & time for compliance training
Testing out of compliance training

- Take test
- If pass, skip training
- Otherwise do training
Saving money by “testing out”

<table>
<thead>
<tr>
<th>Management Report Example</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Number of people</td>
<td>1,000</td>
</tr>
<tr>
<td>B) Time for training if no testing (2 hours each)</td>
<td>2,000 hours</td>
</tr>
<tr>
<td>C) Time to take test (20 mins / test)</td>
<td>333 hours</td>
</tr>
<tr>
<td>D) 25% pass test and skip training</td>
<td></td>
</tr>
<tr>
<td>E) 75% do compliance training</td>
<td>1,500 hours</td>
</tr>
<tr>
<td>F) Hours of training avoided (B – C - E)</td>
<td>177 hours</td>
</tr>
<tr>
<td>G) Average cost / hour</td>
<td>$100</td>
</tr>
<tr>
<td>H) Money saved (F * G)</td>
<td>$17,700</td>
</tr>
</tbody>
</table>
Will the regulator allow?

- Many regulators permit “testing out” to reduce compliance training
  - ABA Bank Compliance magazine article 2009 interviewed some US regulators
    - OTS: Testing out acceptable
    - OCC: Agree, providing testing program well structured. May be some exceptions
    - FDIC: Agree
- Check with your regulator
Reason #7 : Reduce human error
Root causes of human error
(data from UK MHRA 2011, graph by Questionmark)

- Process/procedure incorrect: 22%
- Procedural steps omitted: 6%
- Concentration error: 15%
- Training misunderstood: 29%
- Training missing: 23%
- Poor communication/rushing: 5%
Assessments

- Assessments can fix
  - Training misunderstood (15%)
  - Training missing or out of date (6%)
  - Procedural steps omitted (23%)
  - Process or procedure incorrect (22%)

- Other causes of error
  - Poor communication / rushing (5%)
  - Concentration error (29%)
7 reasons why assessments fortify compliance

- Regulators encourage them
- Demonstrate commitment
- Find problems early
- Document understanding
- Increase knowledge retention
- Reduce costs and training time
- Reduce human error
Getting assessment results you can trust

Brian McNamara
Marketing Director
Questionmark
What can we learn from assessments?

Did they like it?
Did they learn it?
Can they do it?
Can we prove it?

Trustworthy results are essential to answering these questions
Trustable results require assessments be...

- **Reliable**: dependable, repeatable, consistent
- **Valid**: measures appropriate knowledge and skills

**Figure 1:** Reliable but not Valid
**Figure 2:** Not reliable, not Valid
**Figure 3:** Reliable and Valid
Validate assessment content using Job Task Analysis

Ask Subject Matter Experts:
- Do you do the task or supervise it?
- How Difficult is it to do this task?
- How Important is it to do this task?
- How Frequently do this task?
Job Task Analysis (JTA) Reports

### JTA summary report

Assessment name: JTA Medical Staff  
Date report produced: 09 December 2014  
Date of results: All dates  
Filtered by groups: JTA Group  
Ignore assessment revisions: No

<table>
<thead>
<tr>
<th>Reference #</th>
<th>Task</th>
<th>Do Task</th>
<th>Supervise Task</th>
<th>N/A</th>
<th>Very Easy</th>
<th>Easy</th>
<th>Neither Easy or Difficult</th>
<th>Difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Administering medication</td>
<td>97% (30)</td>
<td>3% (1)</td>
<td>0%</td>
<td>26% (8)</td>
<td>32% (10)</td>
<td>13% (4)</td>
<td>10% (3)</td>
</tr>
<tr>
<td>N/A</td>
<td>Assessing patients</td>
<td>77% (24)</td>
<td>23% (7)</td>
<td>0%</td>
<td>19% (6)</td>
<td>33% (11)</td>
<td>10% (3)</td>
<td>10% (3)</td>
</tr>
<tr>
<td>N/A</td>
<td>Assisting patient</td>
<td>71% (22)</td>
<td>29% (9)</td>
<td>0%</td>
<td>29% (9)</td>
<td>23% (7)</td>
<td>16% (5)</td>
<td>26% (8)</td>
</tr>
<tr>
<td>N/A</td>
<td>Communicating with family</td>
<td>87% (27)</td>
<td>13% (4)</td>
<td>0%</td>
<td>29% (9)</td>
<td>13% (5)</td>
<td>9% (2)</td>
<td>35% (11)</td>
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<tr>
<td>Reference #</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Checking patient temperature</td>
<td>74% (23)</td>
<td>26% (8)</td>
<td>0%</td>
<td>19% (6)</td>
<td>35% (12)</td>
<td>13% (4)</td>
<td>16% (5)</td>
</tr>
<tr>
<td>N/A</td>
<td>Showing empathy</td>
<td>100% (31)</td>
<td>0% (0)</td>
<td>0%</td>
<td>29% (9)</td>
<td>32% (10)</td>
<td>10% (3)</td>
<td>26% (8)</td>
</tr>
<tr>
<td>N/A</td>
<td>Checking patient temperature</td>
<td>87% (27)</td>
<td>13% (4)</td>
<td>0%</td>
<td>37% (11)</td>
<td>31% (9)</td>
<td>10% (3)</td>
<td>17% (5)</td>
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<tr>
<td>N/A</td>
<td>Completing medical records</td>
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<td>23% (7)</td>
<td>0%</td>
<td>10% (3)</td>
<td>23% (7)</td>
<td>9% (2)</td>
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<tr>
<td>N/A</td>
<td>Communicating with doctors</td>
<td>97% (30)</td>
<td>3% (1)</td>
<td>0%</td>
<td>10% (3)</td>
<td>19% (6)</td>
<td>16% (5)</td>
<td>35% (11)</td>
</tr>
</tbody>
</table>

### JTA dimension by demographic report

Assessment name: JTA Medical Staff  
Date report produced: 09 December 2014  
Date of results: All dates  
Ignore assessment revisions: No

<table>
<thead>
<tr>
<th>Reference #</th>
<th>N/A</th>
<th>Task: Administering medication</th>
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<tbody>
<tr>
<td>Dimension: Difficulty</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Very Easy  
- Easy  
- Neither Easy or Difficult  
- Difficult  
- Very Difficult

<table>
<thead>
<tr>
<th></th>
<th>Very Easy</th>
<th>Easy</th>
<th>Neither Easy or Difficult</th>
<th>Difficult</th>
<th>Very Difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not defined</td>
<td>100% (1)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Manager</td>
<td>9% (0)</td>
<td>9% (1)</td>
<td>0%</td>
<td>8% (1)</td>
<td>0%</td>
</tr>
<tr>
<td>Medical Staff</td>
<td>18% (3)</td>
<td>12% (5)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

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# JTAs valuable for “blue printing” exam content

## Electrical Skills Test - Blueprint

<table>
<thead>
<tr>
<th>Section</th>
<th>% of test</th>
<th># items</th>
<th>Skill level</th>
<th>Criticality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 1: AC Motors</strong></td>
<td>45%</td>
<td>34</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>1.a - Lorem ipsum dolor</td>
<td>21</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>1.b - Duis aute irure</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>1.c - Excepteur sint occaecat</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Section 2: High-voltage switchgear</strong></td>
<td>25%</td>
<td>19</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2.a - Neque porro quisquam</td>
<td>12</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2.b - Modi tempora incidunt</td>
<td>7</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Section 3: Synchronous Motors</strong></td>
<td>30%</td>
<td>23</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3.a - Totam rem aperiam</td>
<td>11</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3.b - Eaque ipsa quae</td>
<td>12</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Reliable results: Basics of Item Analysis

Difficulty index (aka P “value”)

- What it measures:
  - % answered correctly
- How it is expressed:
  - Number from 0.0 to 1.0
- How to interpret:
  - Too high = too easy
  - Too low could mean...
    - Too difficult
    - Confusing/ambiguous
    - Miscoded

Item correlation discrimination:

- What it measures:
  - Correlation between item score and test score
- How it is expressed:
  - Number between -1.0 and +1.0.
- How to interpret:
  - Generally...
    - < 0.2 low
    - > 0.3 good
Slide 53

Correlation - Discrimination

Difficulty/ P-Value

<table>
<thead>
<tr>
<th>Presentation order</th>
<th>Question wording</th>
<th>Question description</th>
<th>Revision</th>
<th>Topic</th>
<th>Item difficulty p-value</th>
<th>Item-total correlation discrimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A multiple choice question must have at least four choices.</td>
<td>A multiple choice question must have at least four choices.</td>
<td>2</td>
<td>Item Writing</td>
<td>0.737</td>
<td>0.03</td>
</tr>
<tr>
<td>2</td>
<td>In test questions, it is a good practice to include implausible, nonsense, or humorous, incorrect choices.</td>
<td>In test questions, it is a good practice to include implausible, nonsense, or humorous, incorrect choices.</td>
<td>2</td>
<td>Item Writing</td>
<td>0.921</td>
<td>0.534</td>
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<tr>
<td>Question wording</td>
<td>What term is commonly used to refer to a choice in a multiple choice question that is incorrect?</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
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<tr>
<td>Question description</td>
<td>What term is commonly used to refer to a choice in a multiple choice question that is incorrect?</td>
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<td>Revision</td>
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</tr>
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<td>Topic</td>
<td>Item Writing Best Practices</td>
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<td>Perception question id</td>
<td>3040235149157478</td>
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<td></td>
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<tr>
<td>Question type</td>
<td>Multiple Choice</td>
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<tr>
<td>Question status</td>
<td>Normal</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question minimum possible score</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Question maximum possible score</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of participants presented the question</td>
<td>518</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Number of participants who responded to the question</td>
<td>476</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Item difficulty p-value</td>
<td>0.657 (+/- 0.016)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item-total correlation discrimination</td>
<td>0.322 (-0.042 -0.041)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item-rest correlation discrimination</td>
<td>0.163 (-0.045 -0.044)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>High-Low discrimination</td>
<td>0.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant comments</td>
<td>No comments were entered for this question</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Description of item performance**

- This item has acceptable discrimination. On average, high-ability participants perform better on this item than low-ability participants.
- This item is on the borderline of being too easy or too difficult. Note that item difficulty can affect item-total correlation, in that items of high or low difficulty may have lower discrimination statistics. Review the content of the item in the context of the assessment, instruction, and sample of participants to inform decisions about editing this item.
- The percentage of average-ability participants selecting the correct answer (key) to this item is greater than the percentage of high-ability participants selecting the correct answer. High-ability participants are generally expected to select the correct answer at a higher rate than average-ability participants. Consider reviewing the content of the correct answer to determine why this is occurring.
Pop quiz!

Which of the following is the most appropriate passing score for a compliance related test or exam?

A. 70%
B. 80%
C. 90%
D. 100%
E. It depends on how difficult the questions are
Are my pass/fail scores defensible?

**Not so good practice**
- Guess
- Roll dice
- Pick a number out of a hat

**Good compliance practice**
- Set pass/cut score to reflect minimally acceptable competence
- Passing test demonstrates competence
Angoff Method

- Based on this question:
  - What is the % chance that a marginal candidate will get question right?

- How it works
  - Poll SMEs
  - Consider marginal candidates and the probability of getting specific questions right (0-100%)
  - Make a mathematical calculation to determine cut score

Why use this method?

One of our customers in the US military summed up the benefits this way:

- Defensible
- Easy to use and implement
- Widely accepted
## Angoff Method Example

What is the % chance that a borderline candidate will get question right?

<table>
<thead>
<tr>
<th></th>
<th>SME A</th>
<th>SME B</th>
<th>SME C</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Q1</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>75.00%</td>
</tr>
<tr>
<td>Q2</td>
<td>70%</td>
<td>80%</td>
<td>80%</td>
<td>76.67%</td>
</tr>
<tr>
<td>Q3</td>
<td>65%</td>
<td>75%</td>
<td>70%</td>
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</table>

**Totals** | **71%** | **81%** | **76%** | **76%** |
Scenario-based questions: Test “above knowledge”

- What does a yellow traffic light mean?
  - Stop
  - Go
  - Caution

- If you are driving toward an intersection and the light turns from yellow to red, what should you do?
  - Speed up and cross the intersection
  - Stop suddenly
  - Stop gradually
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

Smartphones/tablets ideal for observational assessment

Example Applications
- Sales Training
- Certification
- Medical and Dental (OSCE)
- Equipment operation
Case Study: Observational assessments for learning & compliance

- $10 billion medical equipment manufacturer
- Sales reps trained on new product
- Field trainer then...
  - Observes rep demonstrate the product’s use
  - Using an iPad, completes an observational assessment
  - Rates performance on a 3-point scale:
    - “Performed without Prompting”
    - “Performed with Prompting”
    - “Unable to Perform.”
Summary on good practice

- JTA for valid content
- Item analysis for reliable questions
- Defensible cut scores
- Scenario questions – test above knowledge
- Observational assessments
Recommended White Papers

www.questionmark.com/go/whitepapers
More good practice

Criterion-Referenced Test Development: Technical and Legal Guidelines for Corporate Training

Sharon Shrock and William Coscarelli
Looking for help?

- Questionmark Partner: HRSG
- Leader in the field of competency-based talent management
- Can assist in developing and implementing compliance assessment programs on the Questionmark platform

Contact
Glen Budgell PhD
gbudgell@hrsg.ca
1.866.574.7041 x272
How to Evaluate

• 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/go/request-demo-enus

• Request a 30-day trial of Questionmark OnDemand
  Complimentary technical support during trial
  www.questionmark.com/go/od30us
Thank you for attending!

We hope to see you at a future webinar!