Exam and Procedures

2019 North American CCA Board Meeting

Dawn Gibas, PhD PSS CPSS – ASA/SSSA
Scott Thayn, PhD – CMS
Today’s Conversation

• **Speakers:**
  - Dawn Gibas – Assessment Specialist, ASA/SSSA
  - Scott Thayn - Psychometrician, CMS

• **Topics:**
  - Exam Process
  - Internet Based Testing & Remote Proctoring
  - Score Reporting (Ontario Request)
Exam Process

Dawn Gibas, PhD PSS CPSS – ASA/SSSA
Why do we do what we do?

- Consistency and Standardization Across all Exams.
- Compliance with Accepted Standards for Credentialing Exams.
- Operate and Maintain an Exam Program that is Legally Defensible.
Exam Process

Job Analysis / POs

Update / Maintenance

Scoring / Administration

Cut Score Equating

Item Analysis

Exam Administration

Job Task Analysis

Item Writing

Review Items

Angoff Analysis

Exam Administration

Update / Maintenance

Scoring / Administration

Cut Score Equating

Item Analysis

Exam Administration

Job Task Analysis

Item Writing

Review Items

Angoff Analysis
Exam Development and Maintenance

- Our exams are considered “Low Volume Exams”.
- Statistics need to be considered carefully with low data sets.
Exams by Numbers

Statistics
Overall exam statistic is KR-20
Goal: all exams at or above 0.90
ICCA Exam – 0.921
Local Board Exams
range: 0.764 – 0.897*
Specialty Exams
range 0.511 – 0.850**
*Board exams with at least 40 data points
**All Specialty exams

Numbers of CCA Exams
• ICCA Exam
• Mexico Exam
• Local Board Exams
  • 27
  • 1 being added
    • S. FL/PR/Caribbean
• Specialty Exams
  • 8
  • 2 being added
    • Region 3 4R NM
    • ON Precision Ag
Mexico

- Meeting in Mexico September 2018.
- Updated questions using Item Analysis.
- Checked Spanish translations.
- Exam restructured to match standard structure used by U.S. and Canada.
  - One time through each section.
  - Spanish version is now followed by English.

Los macronutrientes incluyen
  a. nitrógeno, fósforo, y manganeso.
  b. azufre, hierro, y zinc.
  c. manganeso, azufre, y zinc.
  d. calcio, magnesio, y azufre.

The macronutrients include
  a. nitrogen, phosphorus, and manganese.
  b. sulfur, iron, and zinc.
  c. manganese, sulfur, and zinc.
  d. calcium, magnesium, and sulfur.
Exams in Progress or Planned

• **Region 3 4R Nutrient Management**
  • First exam administration February 2020

• **South Florida/Puerto Rico/Caribbean**
  • Significant agricultural differences in southern Florida.
  • Will provide an opportunity to focus more on sub-tropical agriculture.
  • Allows testing on a unique knowledge base a CCA would use in this area that isn’t covered in other exams.
  • Opens the exam program to additional professionals.
  • Exam will be available for 2021.

• **Ontario Precision Agriculture**
  • Will begin work next year.
  • Will be available for 2021.
4R Nutrient Management Specialty Exams

- Exam committees per region and treated as separate exams.
- Active Exams:
  - Region 1 (Western Canada)
  - Region 2 (Ontario)
  - Region 4 (NE U.S.)
  - Region 6 (SE U.S.)
- Regions in process:
  - Region 3 (NW U.S.) first exam administration February 2020
- Options for examinees – can choose which exam to take based on where they primarily work.
Discussion and Questions

Exam Process
Internet Based Testing (IBT) and Remote Proctoring

Dawn Gibas, PhD PSS CPSS – ASA/SSSA
Scott Thayn, PhD – CMS
August 2019 Remote Proctoring

<table>
<thead>
<tr>
<th></th>
<th>Exams Given</th>
<th>No Show</th>
<th>Canceled</th>
<th>Exams Delivered</th>
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<tbody>
<tr>
<td>ICCA</td>
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<td>19</td>
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<td>13</td>
<td>0</td>
<td>0</td>
<td>17</td>
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<td>0</td>
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</tr>
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<td>4R Reg 4</td>
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<td>11</td>
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<td>0</td>
<td>1</td>
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<tr>
<td>Prec. Ag.</td>
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<td>0</td>
<td>27</td>
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<tr>
<td>Resistance</td>
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<td>4</td>
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<tr>
<td>Sustainability</td>
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<td>0</td>
<td>2</td>
<td>18</td>
</tr>
</tbody>
</table>

Exams Given: Total number of exams given.
No Show: Total number of no shows.
Canceled: Total number of canceled exams.
Exams Delivered: Total number of exams delivered.
Remote Proctoring August 2019

Scheduling was August 5-15

Exam Window was August 9-16
Scheduling Instructions to Examinees

It’s time to schedule your remote proctor exam. Below you will find important information that you will need to schedule and take your exam. Keep this information!

Profile Information

• Below is your profile information. This info must be entered exactly as it appears below. You may want to cut and paste the information in when needed.
  
  ASA #
  First Name
  Last Name
  Email

You must enter the information above exactly as it appears. If the information has an error, we will update our system after you have completed your exam. The information will not impact your exam.

Reminders

* Scheduling of your exam must be done at least 24 hours in advance of when you would like to take the exam.

* You are allowed to login 15 minutes prior to your exam time. The proctor will wait only 30 minutes past your scheduled exam time.

* You must have a working built-in or external webcam and microphone.

* Government issued photo ID must be presented.

* During the exam you must be in a quiet, paper free, interruption free environment. Your table or desk must be clear.

* Within the exam, a calculator will be provided.

* No other items will be allowed other than those mentioned above.
Instructions to Examinees, con’t.

• Your Exam Link

• The link below will be used to schedule your exam and take your exam. Click the link to schedule your exam. On the day of your exam you will click the link below and login. You will need to enter the password you created when you scheduled your exam.

• <Link>

• If you have signed up to take two exams you will be receiving two emails. You must schedule each exam separately by using the link received in the email for that exam.

• Troubleshooting

• *Be sure you are using the information exactly as it appears above in your profile information.
Scheduling Flow

CCA Office  (Original Registration, Notice to Schedule)

Examinee  (Register, Pay fees, Schedule when notified)

CMS  

Examity  

Caveon
Dear Dawn Gibas,

You have successfully scheduled your Precision Agriculture Specialty - Aug 2019 exam. Your exam appointment details are listed below.

<table>
<thead>
<tr>
<th>Your Exam Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your Exam Appointment ID : 14210000025</td>
</tr>
<tr>
<td>Exam Name : Precision Agriculture Specialty - Aug 2019</td>
</tr>
<tr>
<td>Appointment Date : 08/15/2019</td>
</tr>
<tr>
<td>Appointment Time : 14:00:00 [Eastern Time]</td>
</tr>
<tr>
<td>Login to launch your exam: [<a href="https://Prod.examity.com/CMS/">https://Prod.examity.com/CMS/</a>]</td>
</tr>
</tbody>
</table>

Prior to Exam Day:
- Please check your system readiness [here](#)

On the day of your exam, be mindful of the Testing environment requirements listed below. Your proctor will start your session precisely at your appointment start time, so allow yourself enough time to login to the Examity site before your appointment.

**Testing Environment Requirements**

<table>
<thead>
<tr>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alone in room</td>
</tr>
<tr>
<td>Clear Desk and Area</td>
</tr>
<tr>
<td>Connected to a power source</td>
</tr>
<tr>
<td>No phones or headphones</td>
</tr>
<tr>
<td>No dual monitors</td>
</tr>
<tr>
<td>No leaving seat</td>
</tr>
<tr>
<td>No talking</td>
</tr>
<tr>
<td>Webcam, speakers, and microphone must remain on throughout the Test.</td>
</tr>
</tbody>
</table>
Remote Proctoring Scheduling

Scheduling Issues

• Reading the Directions
• Names
  • Name in our system
  • Hyphens, dashes, spaces
• Passwords
  • 8 characters, 1 symbol, 1 number
• Transition from CMS to Examity was not intuitive.
• Security questions
• Examikey

Updates

• “Forgot Password” added.
• Names manually fixed for Aug.
  • CCA office will emphasize need to use correct names to examinees.
• Transition from CMS to Examity will be more seamless and more intuitive.
  • CMS will pass profile information through to Examity.
• Security questions and Examikey being deleted.
• Removing profile fields that aren’t necessary.
Exam Instructions

Proctor Verbal Instructions

• You are about to take the International Certified Crop Adviser Exam.
• There are 150 questions in 4 sections on this exam.
  - Nutrient Management - 42 questions
  - Soil and Water Management – 35 questions
  - Pest Management – 36 questions
  - Crop Management – 37 questions
• You will have 2.5 hours or 150 minutes to complete the exam.
• Read each question carefully.
• Select the best answer.
• Additional information is provided in the written instructions prior to the start of the exam.

Exam Written Instructions

• Exam resources: this exam has a calculator button at the top of the exam screen.
• Click on the button to open the calculator, it can be sized by dragging the end of the box outwards.
• You may skip and come back to questions later by using the FLAG button to mark where to revisit.
• This exam has a time limit of 150 minutes (2.5 hours).
• There is a clock in the upper right corner of the screen to help you manage your time.
• When the time expires, the exam will shut down and you will be asked to submit your work.
• The timer starts when you begin the exam.
• Read each question carefully.
• Pick the best answer.
Exam Flow

CCA Exam in AuthorWise <-> Certification Management Systems (CMS) <-> Caveon

Examinee <-> Examity
Remote Proctoring – Exam

Issues

• Reading the Directions.
• Remembering security questions.
• Invalid government ID.
• Using the wrong link to access the exam.
• Company firewalls.
• Ending the scheduling window affected exams on Aug. 9.
  • Quickly fixed and all took their exams.
• Scratch paper.

Updates

• Coding issues were fixed as soon as they were identified.
• Everyone took the exam they were scheduled to take.
  • A few were delayed.
  • A couple rescheduled and their URLs were changed to accommodate this.
• CMS has worked with Examity to update issues with their system’s UI.
• Will be allowed scratch paper in February.
Remote Proctoring
Taking the Exam

Taking the Exam
• Calculator/PDFs
• FLAG button
• Security
  • Proctor
  • Video

Updates
• Proctor
  • Conversation with Examity
• Scratch paper
Comments from Examinees – called in during window.

- 17 individuals – 2 of which were to discuss medical needs
- Note that 3 people needed assistance or had comments about two or more things.

4 - Broken Link - time zone
2 - Invalid Password - could not create a valid password
2 - Registering for 2 exams - not logging out
2 - Scratch paper
2 - Medical Need
1 - Scheduling from phone Error
1 - Calculator Error
1 - Clicked the wrong link
1 - Didn’t know his password
1 - Didn’t know there was a calculator or flags
1 - Had to switch to personal computer, work computer would not allow proctor to launch the exam (via email)
1 - Just wanted help scheduling
1 - Password Reset Spinning
1 - Stated proctor need to restart exam when she went to the conversion table (pdf)
Comments from Examinees – called in

“I love that I have a week to take the exam. I can schedule it on a day that works best.”

“Beats having to drive close to 3 hours to get to an exam site.”

“My boss is happy because now we don’t have to take off an entire day.”

“Once the kinks are worked out it’s going to be great!”
Survey on Remote Proctoring sent September 11
Open until September 20. Early Results 44 out of 83 responses

Comments by Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral</td>
<td>16</td>
</tr>
<tr>
<td>Unfavorable</td>
<td>14</td>
</tr>
<tr>
<td>Favorable</td>
<td>12</td>
</tr>
<tr>
<td>Scratch Paper</td>
<td>10</td>
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<td>Proctor</td>
<td>8</td>
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<tr>
<td>Calculator</td>
<td>6</td>
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<tr>
<td>Office/Home</td>
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<tr>
<td>Connectivity</td>
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<td>Checking In</td>
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<td>Content</td>
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<td>Internet Speed</td>
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</tr>
<tr>
<td>ID</td>
<td>1</td>
</tr>
</tbody>
</table>
Remote Proctoring – Scoring

Timing

• We are still also administering Paper/Pencil exams.
  • This will be short-term as we work to get the remainder of the exams updated in the software.
• Our computer system software was built for membership, it does not allow us to send out scores except all at once.
  • We need to wait for all scores to be available and Paper/Pencil will slow the process down.

Time/Cost Savings – Full Implementation

• Answers are logged on the server as soon as a person answers the question.
• As soon as Examity does their audit of exams the scores are available.
• We are low volume, need to do the item analysis.
• Currently 6 weeks, should be cut to 3 or 4.
• At some point, it may be possible to provide Pass/Fail at the conclusion of the examinee’s session.
• Analysis of cost savings in a few slides.
Going Towards Remote Proctoring

• Set to start with the February 2020 exam administration.

• Can all local boards participate in remote proctoring?
  • Not yet, but we are getting there.
  • There are 4 local board that aren’t there yet but should be by 2021.

• What needs to happen?
  • Need this Board to approve moving forward with Remote Proctoring.
Internet Based Testing (IBT) Cost Analysis

**IBT Savings**

- ICCA Budget 2018
- Exam Proctor Expense $2,381
- Exam site rental $4,043
- Exam Distribution and Postage $17,223
- Exam Printing and paper, supplies $11,764

**Total potential savings** $35,411

1700 exams = ~$20.00 per exam savings
## Remote proctoring fee in August 2019

<table>
<thead>
<tr>
<th>Duration</th>
<th>Fee</th>
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</thead>
<tbody>
<tr>
<td>2 hours</td>
<td>$45</td>
</tr>
<tr>
<td>3 hours</td>
<td>$60</td>
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</tbody>
</table>

**Potential** if all exams move to remote proctor price per exam would decrease (1200 or more exams)

<table>
<thead>
<tr>
<th>Duration</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 hours</td>
<td>$38</td>
</tr>
<tr>
<td>3 hours</td>
<td>$50</td>
</tr>
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</table>
Discussion and Questions

IBT and Remote Proctoring
Score Reporting

Dawn Gibas, PhD PSS CPSS – ASA/SSSA
Scott Thayn, PhD – CMS
Resolution from Ontario Regarding Score Reporting

Before we go through the actual resolution, we will go through the major points that were made for the resolution and then open it up for discussion and questions.

THEREFORE BE IT RESOLVED that details regarding exam scoring, including item analysis and mark distribution, be released to the Ontario Exam Committee and other local Exam Committees upon request and that individual scores be released to all exam writers.
Resolution from Ontario Regarding Score Reporting

Major “Whereas” points for the Resolution include:

• It is important for employers and exam writers to know whether there are specific areas on which repeat exam writers should be focusing study efforts or whether they are best not to continue to pursue attaining the CCA designation.

• Below is the statement that shows on the results page for Failed results when categories are listed:
  • For future study, the area(s) needing the most improvement are listed below:

• Below is the statement that shows on the results page for Failed results when No categories are listed:
  • If no areas are listed, your exam performance did not indicate any major areas of deficiency, but you did not meet the overall passing score for the exam.

• It should be noted that we cannot do the first for Specialty Exams because there are no categories.
Resolution from Ontario Regarding Score Reporting

Major “Whereas” points for the Resolution continued:

- Candidates, their employers, growers, government officials, and the broader agricultural deserve to know that the CCA exam is fair and credible.

  Consistency, Compliance with Standards, Legally Defensible
  Exam process uses Subject Matter Experts
  Exam follows a standard process
  Exam undergoes review by the Subject Matter Experts
  Exam undergoes review in house by the Assessment Specialist
  Item Analyses are completed each Feb or Aug, dependent on exam
  Item Analyses are reviewed by a psychometrician
  Equating is approved by a psychometrician
  Angoff Analysis is used to set a cut score (this method is a widely accepted process in the testing community at large).
Resolution from Ontario Regarding Score Reporting

- The Ontario Exam Committee and Board are looking for continuous improvement in the exam questions and in the resources provided to exam candidates.
  
  Exams and question performance are reviewed each year, first by the Assessment Specialist and then by the Exam Committee. Items are edited or modified when performance characteristics are indicated.

- Without additional information regarding the item analysis and distribution of marks, it is not possible for the Exam Committee to determine the cause for overall poor exam performance or to work towards improvement.
  
  This is addressed currently after the exam administration in February. In 2015 we started sending summary letters to the Exam Committee Chairs that detail how the exam is doing overall, problem questions and what the Exam Committee needs to work on for the next year. This year was different because Dawn was out on medical leave.
Resolution from Ontario Regarding Score Reporting

• The CCA program in Ontario is managed by a registered, Canadian not-for-profit corporation with legal liability and accountability, further necessitating that the Ontario CCA Board and the Exam Committee be able to support the exam credibility to the agriculture sector including CCA employers.

Letters are sent to the exam committee chair regarding the item analysis and how the exam is performing as well as outlining changes that the exam committee needs to consider.

The exam committee is scheduled for meeting to review how to interpret or make inferences from the item analysis to update the exam.

Changes are approved, through consensus, with the exam committee prior to be changed in the exam software.

One of our major premises is that we have a legally defensible exam program.
Rationale for Pass/Fail Reporting

- Certification exams are designed and built for the distinct and express purpose of determining whether an examinee is either above or below a single ability level, which is represented as the cut score.
- No other inference or conclusion can be made from the scores of the exam.
- Reporting actual scores for the exams leads to invariable comparison of scores and the attempt to draw meaning beyond which the exam was designed to provide.
- The only valid decision that can be reliably made from the test scores is a pass/fail decision and that is the only result we report on the exams.
## Ontario Resolution

The Ontario CCA Board would like the following considered by the North American CCA Board:

<table>
<thead>
<tr>
<th>Details of exams including the following are released to Exam Committees upon request:</th>
<th>Individual scores be released to all exam writers.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam scoring</td>
<td></td>
</tr>
<tr>
<td>Item Analysis</td>
<td></td>
</tr>
<tr>
<td>Mark distribution</td>
<td></td>
</tr>
</tbody>
</table>
Thank you!

Please feel free to contact me:

Dawn Gibas
dgibas@sciencesocieties.org
419-632-0095

I will be here until tomorrow morning.
Scott has to leave immediately after this session for another meeting.