



Innovations in Testing 2024

Quicker to Quality:

Leveraging the Right Technology at the Right Time to Optimize Exam Development

BETTER TOGETHER

Embrace change. Share solutions.



**Corina M. Owens,
Ph.D.**

**VP, Client
Services & Sr.
Psychometrician,
Alpine Testing
Solutions**



**Lisa S. O'Leary,
Ph.D.**

**VP, Product &
Service
Management &
Sr.
Psychometrician,
Alpine Testing
Solutions**

IT CERTIFICATION COUNCIL

ITCC Mission



The IT Certification Council (ITCC) is a nonprofit organization committed to growing and promoting professional IT certifications.

Our core purpose is to support the industry and our member companies by marketing the value of certification, promoting exam security, furthering innovation, and establishing and sharing industry best practices.

Founded in 2007, ITCC is a community of 50+ of the most respected companies in the IT certification industry.

ITCC Member Companies



Technology-Enabled Exam Development

- **Augment the people-powered exam development process with technology**
 - * Reduce subject matter expert (SME) time commitments
 - * Increase efficacy of SME engagement and efforts
 - * Decrease time-to-market for new exams and exam refreshes
- **Improve the outputs and outcomes of previously people-reliant workflows**
 - * Stay further ahead of rapidly changing content domains
 - * Increase process efficiency and output consistency
 - * Enhance validity evidence for your exams

Benefits

- **Do More With Less aka Use the Right “Tool” at the Right Time**



Streamline SME and program staff involvement given resource constraints to maximize output and focus efforts



Optimize prior development efforts and existing collateral and content to drive downstream exam development activities

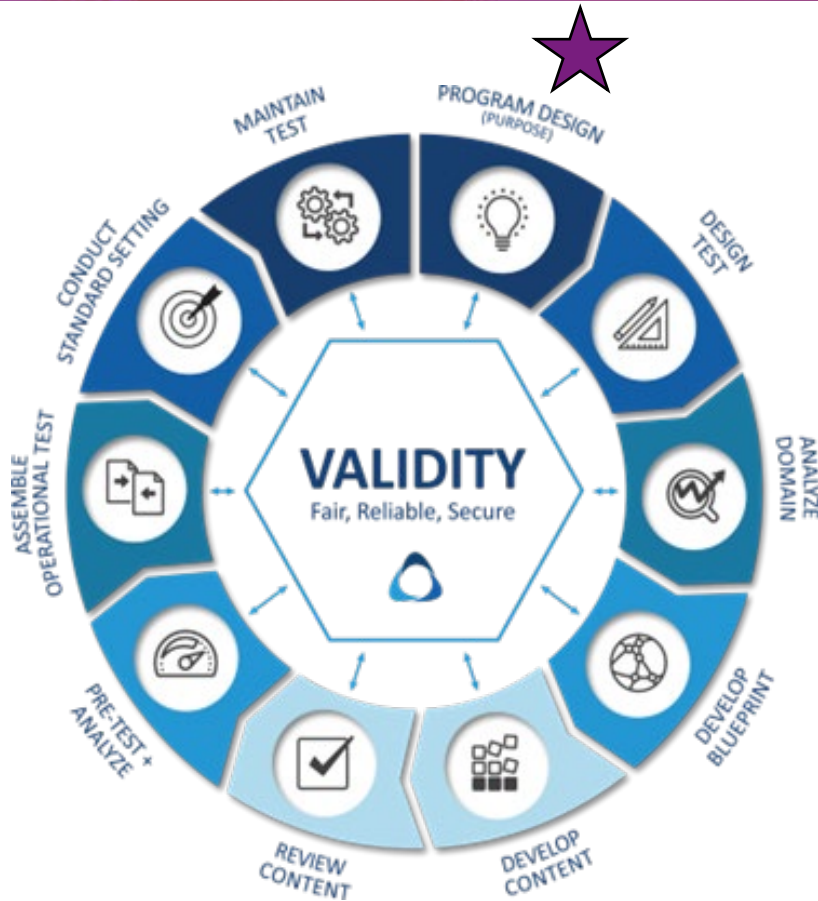


Interpret massive data to provide empirical and/or predicted data from which to make informed decisions

Level-Setting

- **Leverage technology to enhance the exam development process, not replace all human involvement**
 - * Technology could encompass use of machine learning, natural language process, generative AI, and/or heuristic models along with platform-embedded workflows
 - * Need to consider exam and program security throughout the process, including use of secure “walled gardens” and private data lakes wherever possible
 - * Should leverage SMEs to review “clay on the table” generated throughout the exam development cycle to provide targeted feedback against prompts rather than initiate greenfield engagements

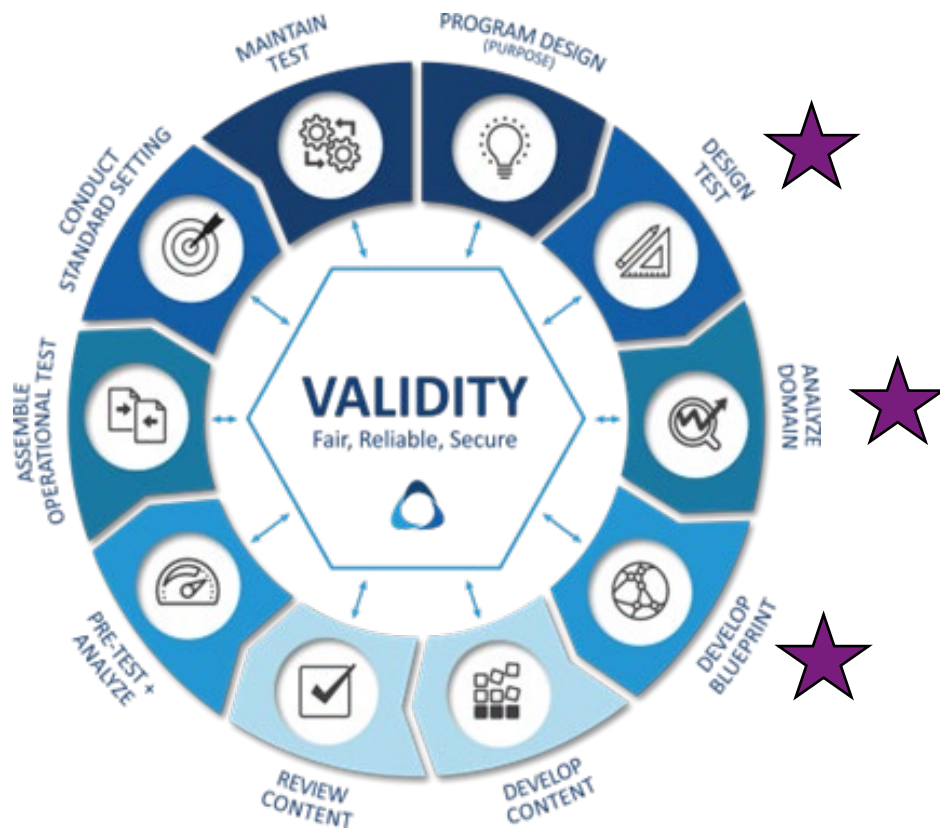
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▪ Program Design

- ✦ Market research on:
 - 🌐 Trends within the profession
 - 🌐 Related, or tangential fields/domains
 - 🌐 Competitor or partner corollary programs
- ✦ Stratification and/or vertical articulation of job roles or domains
- ✦ Business rationale, stakeholders, constraints, and requirements

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■ Domain Analysis

- ✦ Draft test design documentation
- ✦ Definition of competence ranges across domain
- ✦ Job task inventory
- ✦ Measurable test objectives across cognitive complexity levels
- ✦ Recommended blueprint specifications

Small Group Exercise & Discussion

- 1. What pain points has your organization faced at these exam development stages?**
- 2. What technologically-driven processes or workflows have you attempted, if any, to address those problems?**
- 3. What other ideas do you have for how technology could enable these exam development phases?**

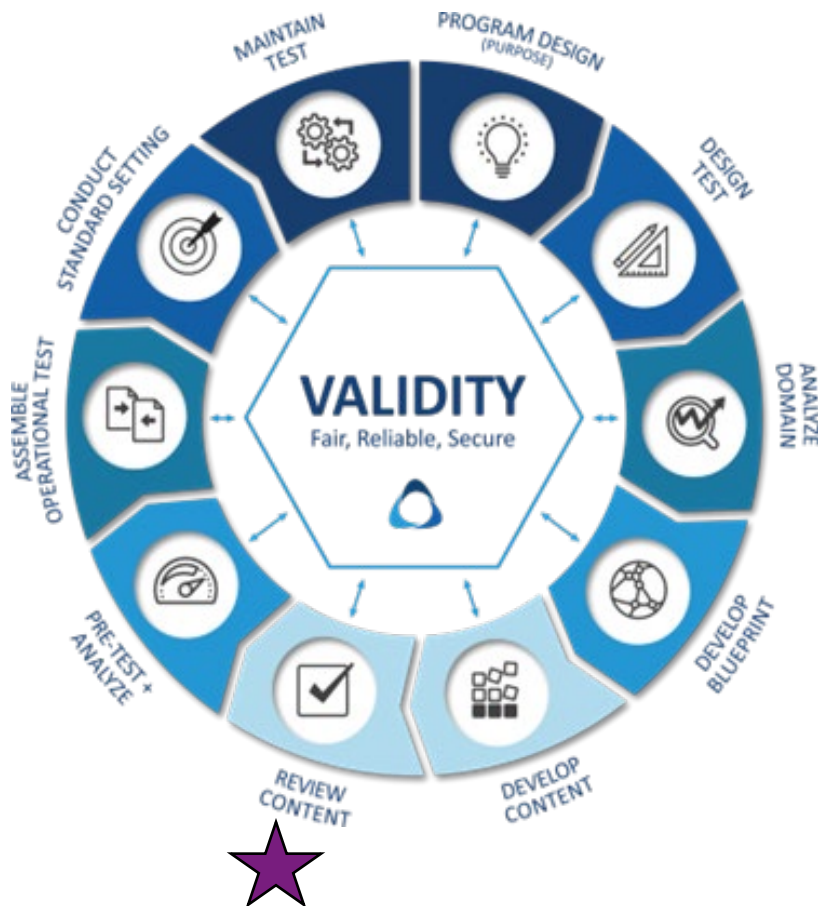
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■ Content Development

- ✦ Automated Item Generation
- ✦ Automated Option Generation
 - 🌐 Common mistakes/misconceptions
- ✦ Item Writing Templates/Supports
- ✦ Blueprint Mapping
- ✦ Classification/Cognitive Complexity Mapping

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▪ Content Review

- ✦ Item Screening & Feedback
- ✦ Automated Cueing & Overlap
- ✦ Variant/Enemy Item Identification
- ✦ Cultural Bias & Sensitivity Review
- ✦ Congruence & Accuracy Review
- ✦ Translation simplification
- ✦ Rationales/references

Small Group Exercise & Discussion

- **What pain points has your organization faced at this exam development stage?**
- **What technologically-driven processes or workflows have you attempted, if any, to address those problems?**
- **What other ideas do you have for how technology could enable this exam development phase?**

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▪ Item Analysis/Form Assembly

🌴 Real-time:

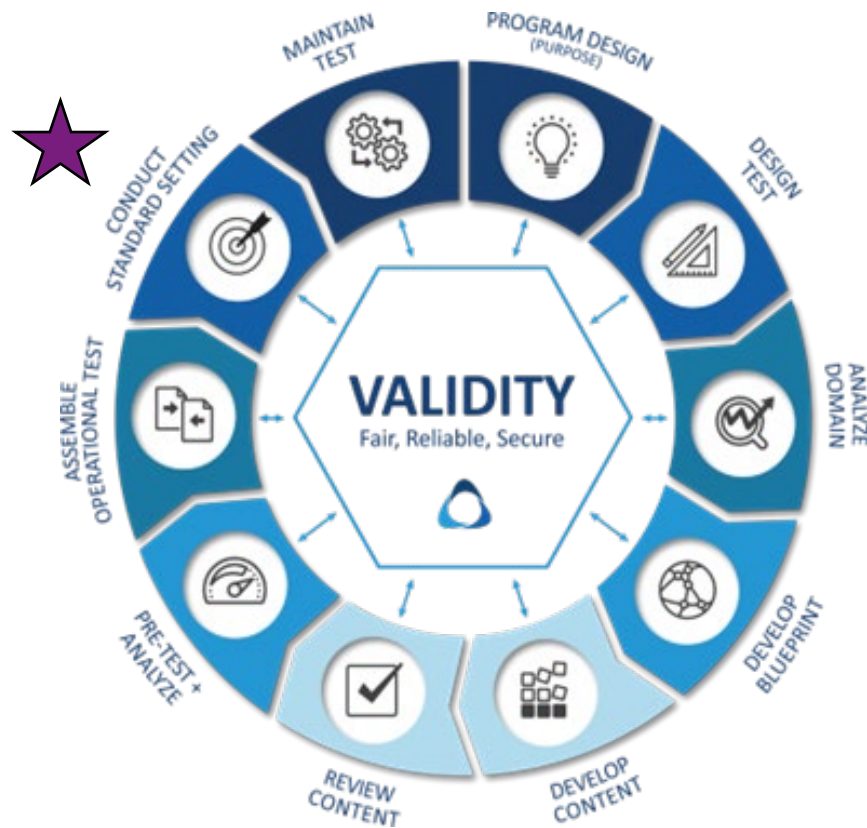
- 🌐 Item calibrations
- 🌐 Form-level analysis
- 🌐 Data forensics

🌴 Automated forms assemblies

🌴 Adaptive algorithms



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▪ Standard Setting

- ✿ Predicted Item Difficulty
- ✿ Estimated Impact Data
- ✿ Predictive Hofstee
 - 🌐 Use of prior score distributions to generate predictive expected ranges
- ✿ Asynchronous methodologies

Technology-Enabled Exam Development

- **Goal:**

Strive to boost the power of the people involved in exam development through smart use of modern technology in secure, responsible ways throughout the exam development cycle to save time, reduce costs, and improve outcomes

Questions?

Thank you!



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