

CLEAR 2012 Annual Educational Conference Developing a Test Content Outline to Promote Excellence in Licensure & Certification

September 6-8


 Council on Licensure,
Enforcement and Regulation

 2012 Annual Educational Conference - September 6-8
San Francisco, California

**What Must They Know?
Developing a Test
Content Outline to
Promote Excellence in
Licensure & Certification**

Presenters: Cindy L. Hill, ACT, Inc.
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Technician Certification Board


Promoting Regulatory Excellence

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Topics

- Different methods to turn job analysis data into a TCO
- KSA vs Task centered test content outlines
- Ways to use TCOs beyond development of exam

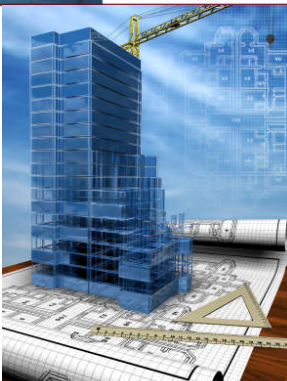
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Many Different Names:

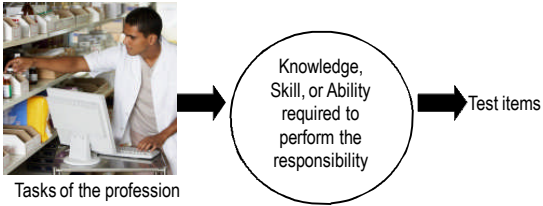
- Job Analysis
- Role Delineation Study
- Practice Analysis

Same Goal




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Establishing Content Validity




Tasks of the profession → Knowledge, Skill, or Ability required to perform the responsibility → Test items

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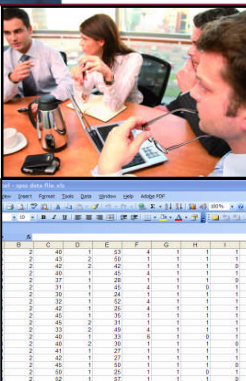
What role have you had in a job analysis?


- A. Solely responsible
- B. Worked with team
- C. Worked with consultant
- D. Subject Matter Expert (SME)
- E. I have not had a role

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Many Different Methods:


- Qualitative
 - Logical analysis
 - Critical incidents
 - Direct Observation
- Quantitative
 - Survey
- Combination



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If you have participated in a job analysis, did it include a survey?

A. Yes
B. No

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Potential Outcomes of a Job Analysis

- List of critical/important tasks
- Lists of critical/important KSAs
- Tasks and KSAs are linked together
- When is a task required to be performed?
Entry or effective
- Accurate picture of current practice

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Did the job analysis include linking of tasks to KSAs?

A. Yes
B. No


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|--------------------------------------|--|--|--|
| Grouped Initial Task List | | Page 1 | |
| Group - A - Communication | | | |
| 1 | Answers telephone by using company greeting, determining the reason for the call, providing info, taking a message on While You Were Out Form(date, time, short comment, name, phone number) or email, or transferring the call using directory. | | |
| 2 | Responds to messages by reading the message, returning call, or forwarding. | | |
| 3 | Manages work e-mail by reading email, determining needs and taking appropriate action (e.g., reply, find and attach a document) and sorting e-mail into folders. | | |
| 4 | Distributes mail and faxes by placing it in mailboxes. | | |
| 5 | Assists visitors by contacting appropriate personnel. | | |
| Group - B - Office Operations | | | |
| 6 | Stores materials by placing inactive files in banker's boxes, completing storage form by hand or electronically (e.g. contents, dates, file folder name) attaching form on box and keeping record of where boxes are stored in folder on computer desktop. | | |
| 7 | Assembles packets by referring to checklist or sample packet, placing materials in company logo folders. | | |
| 8 | Maintains office supplies by checking inventory against the list, counting and subtracting to determine the amount to order, and submitting supply requisition to purchasing. | | |
| 9 | Orders office supplies by checking inventory list and selecting office supplies from vendor website or catalog, (locate item and item number, # of items needed, item cost and totals, completing the Purchase Requisition | | |

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|---|--|--|----------------|---------------------|
| Sample Task Ratings | | | | |
| 1 | Seeks business for the broker-dealer through customers and potential customers. | | | |
| 1 | 2 | 3 | 4 | |
| Not very important | Of low importance | Of moderate importance | Very important | Extremely important |
| Contact customers and potential customers in person, by telephone, by mail, and/or other means. | | | | |
| 1 | 2 | 3 | 4 | 5 |
| Conducts lectures, seminars, and forums with customers and potential customers. | | | | |
| 1 | 2 | 3 | 4 | 5 |
| 2 | Evaluates customers in terms of financial needs, current holdings, and available investments and makes suitable recommendations. | | | |
| 1 | 2 | 3 | 4 | 5 |
| Not very important | Of low importance | Of moderate importance | Very important | Extremely important |
| Obtains a current financial and investment profile of the customer. | | | | |
| 1 | 2 | 3 | 4 | 5 |
| Assists the customer in determining investment needs and objectives | | | | |
| 1 | 2 | 3 | 4 | 5 |

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| Knowledge and Skills for Administrative Assistant Job | | | |
| I. | Document Layout, Design, and Reproduction | | |
| | A. Formatting (e.g., bold, alignment, styles) | | |
| | B. Designing spreadsheets (e.g., layout and formulas) | | |
| | C. Creating templates (e.g., forms) | | |
| | D. Methods of reproduction (e.g., laminating, binding, and copying) | | |
| II. | Office Equipment | | |
| | A. Usage | | |
| | B. Types (e.g., fax, computers, printers, copiers) | | |
| | C. Troubleshooting | | |
| III. | Managing Physical Resources | | |
| | A. Equipment and supplies (e.g., storage and maintenance) | | |
| | B. Ergonomics | | |
| IV. | Accounting Procedures and Analysis | | |
| | A. Departmental budget | | |
| | B. Expense reports | | |
| | C. Purchasing | | |
| V. | Communication | | |
| | A. Verbal (e.g., answering the phone) | | |

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Sample Linking of KSAs to Tasks Survey



Please evaluate each task statement and consider whether any KSAs are required to perform the task. Your judgment is to be straightforward – either the task requires the knowledge, skill, or ability, or it does not require it. Your goal is to identify the primary KSAs, not every knowledge, skill, or ability that may be required for performing the task.


1 1.1 Contacts customers and potential customers in person by telephone, by mail, and/or other means.

- Requirements for registration of individuals
- Standards for public communications
- Investment profile of a customer
- Investment objectives
- Investment risk
- Taxation

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Determining KSA Weights


- Each KSA “takes on” the weight of the tasks to which it is linked.
- A KSA weight is influenced by:
 - Number of tasks linked
 - Weight of linked tasks (from task survey data)
- All KSA weights add to 100%.

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Obtaining KSA Weights


| | Weight | |
|--------------------------------|---|------|
| KSA ← Drug interactions | .65 | |
| Linked Tasks { | • Contact prescriber/authorized representatives for clarification of prescription/medication orders | 1.35 |
| | • Enter prescription/medication order information into patient | 1.20 |
| | • Notify the pharmacist of any clinical alert | .96 |

$1.35 + 1.20 + .96 = 3.51/539.77 = .65$

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Link Tasks to KSAs Handout

| Task | KSA | | | | | | Prereqs. | Management |
|---|---------------|-------------------------|---------------------------------|-----------------------------|-------------------------------------|---------------|----------|------------|
| | Task Category | Design & Implementation | Managing Operations & Equipment | Managing Physical Resources | Managing Personnel & Organizational | Communication | | |
| Group A - Construction | | | | | | | | |
| 1. Measure materials | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2. Prepare forms for concrete | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 3. Change order forms | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4. Coordinate and schedule by building information modeling | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5. Coordinate scheduling by estimating software processes | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Group B - Office Operations | | | | | | | | |
| 6. Prepare schedules | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7. Scheduling software | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8. Prepare cost estimates | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9. Change order requests | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10. Obtain and copy documents for building department reviews | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11. Organize and schedule documents | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12. Register and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 13. Coordinate and schedule by building information modeling | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 14. Coordinate and schedule by building information modeling | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
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| 28. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Group C - Estimating | | | | | | | | |
| 33. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 36. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 37. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 38. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 39. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 41. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 42. Prepare and submit documents for permit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Group D - Document Preparation | | | | | | | | |

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Two Types of TCOs

- Knowledge, skill and ability centered
- Task centered
- Example of each
- Advantages and disadvantages of each

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Example of Task Centered TCO

| | |
|--|-----|
| • Gather information regarding factors that influence occupational performance | 13% |
| • Formulate conclusions regarding the clients needs and priorities to develop a client-centered intervention plan | 28% |
| • Select and implement evidence-based interventions that support participation in areas of occupation throughout the continuum of care | 39% |
| • Uphold professional standards and responsibilities to promote quality in practice | 20% |

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Advantages of Task Centered TCOs

- Direct link between job and test easy to show

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Disadvantages of Task Centered TCOs


- Not Practical - Hard to test performance of task directly with large numbers of candidates and traditional testing techniques
- Items may be written only to test the most obvious knowledge required by the task
- Some areas of knowledge may be overlooked or underweighted

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Disadvantages of Task Centered TCOs

“Therefore, to prepare to take the exam, we suggest that you study this Outline and especially consider what the underlying knowledge, skills, and abilities you need to be able to serve patients.”


- The candidate has to figure out what KSAs they should study.

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Example of KSA Centered TCO


- Knowledge and skill in application of: **16%**
 - code requirements, laws, standards & regulations
 - sustainable design practices
- Knowledge of and skill in integration with: **18%**
 - building systems
 - building construction
- Knowledge of and skill in the development and use of: **20%**
 - construction documents
 - Schedules
 - Specifications
 - Architectural woodworking
- Knowledge and skill in: **10%**
 - measuring
 - drafting and technical drawing conventions

Partial TCO

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Advantages of KSA Centered TCO

- Item writers will be able to develop test items directly from the KSAs instead of extrapolating them from tasks
- Less duplication - Same KSA may be required for many tasks
- Students can study directly from KSAs and they usually link better to courses


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Disadvantages of KSA Centered TCO

- Doesn't appear to be as direct of a link to job


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Can you think of additional advantages or disadvantages of task or KSA centered TCOs?

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Link Tasks to KSAs Handout

| Task | Task Frequency (1 to 5) | KSA | | | | | |
|--|-------------------------|------------------|----------------|--------------------|--------------------|--------------------|--------------------|
| | | Task 1: Planning | Task 2: Design | Task 3: Management | Task 4: Management | Task 5: Management | Task 6: Management |
| Group A - Communications | | | | | | | |
| 1. Answer telephone | 0 | | | | | | 1 |
| 2. Answer direct mail | 0 | | | | | | 1 |
| 3. Manage mail delivery | 0 | | | | | | 1 |
| 4. Coordinate mail delivery to mailboxes | 1 | | | | | | 1 |
| 5. Assist customer with mail delivery procedures | 0 | | | | | | 0 |
| Group B - Office Operations | | | | | | | |
| 6. Operate copier | 0 | | | | | | 1 |
| 7. Answer phone calls | 0 | | | | | | 1 |
| 8. Operate office equipment | 0 | | | | | | 1 |
| 9. Operate office equipment | 0 | | | | | | 1 |
| 10. Operate office equipment | 0 | | | | | | 1 |
| 11. Operate office equipment | 0 | | | | | | 1 |
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| 100. Operate office equipment | 0 | | | | | | 1 |


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Preliminary Task Centered TCO

| | |
|-------------------------|-----|
| A. Communication | 11% |
| B. Office Operations | 15% |
| C. Scheduling | 26% |
| D. Document Preparation | 22% |
| E. Budgeting | 14% |
| F. Equipment Operation | 12% |

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|---|-----|---|--|
| Preliminary KSA Centered TCO | | | |
| A. Document Layout, Design and Reproduction | 19% | | |
| B. Managing & Operating Office Equipment | 12% | | |
| C. Managing Physical Resources | 1% | | |
| D. Bookkeeping Procedures & Analysis | 9% | | |
| E. Communication | 16% | | |
| F. Records Management | 5% | | |
| G. Locating Information | 24% | | |
| H. Scheduling & Coordinating | 14% | | |


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|------------------------------|--|---|--|
| Modifications? | | | |

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|  | | | |

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Additional Ways to Use TCOs

- Guidance for item writers
- Study resources for candidates
- Guidance for educators
- Interpretation of test scores/results

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Using Results to Study

- Students can read through TCO and identify areas that are least familiar to target their study time.
- Create a color-coded system - one color for the areas you know the least, a second color for the areas that you have some familiarity with and a third color for the areas with which you are the most comfortable.

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Using Results to Study


- Study groups can use the TCO to divide up the content. Someone who is strong in one area can “teach” the others in the group.
- They can also divide up the areas where no one in the group is strong. This will allow them to make research assignments.


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Assist Item Writers

- Item Writers can have a better understanding for the KSAs if they can see the tasks that were associated with them (i.e., contextualized content)

Write a test item on Scheduling and Coordination.





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Assist Item Writers

Scheduling and Coordination:


- meetings
- shipment of packages
- copier/fax machine repair
- conference rooms
- printing of materials
- off-site facilities
- conference calls
- travel



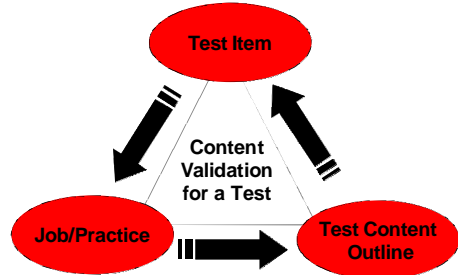
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Assist Training Developers

- Training Developers can do a better job capturing/enhancing the understanding of a KSA if the tasks that link to it are available for review

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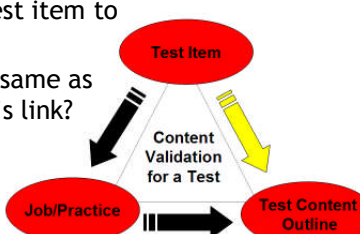
Techniques to Maintain Link




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Link Test Items Back to TCO

- New Group of SMEs
- Link each test item to TCO
- Is their link same as item writer's link?



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Best Way to Maintain Link

- Make the link during TCO development
- Have the KSAs and Tasks linked by SMEs
- Two Ways
 - Identify KSAs required to perform each task
 - Identify the tasks that require each KSA

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