

A-TrACC Evaluation Session

Tips for Developing and Using Data Collection Instruments

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Session Outline

I. Creating Instrumentation and Stakeholder Involvement

II. Item Development– Considerations

III. Exercise on Item Development– Critique

IV. Considerations of Face and Content validity

V. Retrospective Pre–Tests

Creating Instrumentation

- ▶ An instrument is the form from which information is elicited and upon which information is recorded.
- ▶ Should you start from scratch or use what's already out there?

Creating Instrumentation

- ▶ Evaluation may require the development of specific instrumentation, tailored to a particular program activity or evaluation topic
- ▶ Requires consideration of evaluation resources (expertise, time) and technical skills (reliability, analysis) of the evaluator
- ▶ *Requires thought and planning on the part of stakeholders....*

Who are Evaluation Stakeholders?

People who have a “stake” (vested interest) in the evaluation findings (Greene, 2006).

People...

–with decision authority (funders, advisory boards)

 –with direct responsibility for program (faculty, developers, managers, researchers, evaluators, regulators)

–who are intended beneficiaries (patients, trainees, their communities)

How Can They Influence Instrumentation?

- ▶ Influence the guiding questions of evaluation
- ▶ Content expert input
- ▶ Item development
- ▶ Face and content validity

Item Development

- ▶ First, write down several general questions that your evaluation needs to answer.
- ▶ Then write down specific questions that address these, thinking about your target population.

Considerations When Developing Questions

- ▶ Necessity
 - What is your age?
 - What is your date of birth?

More Considerations

- ▶ Unknown information
 - Compared to other people your age, how would you rate your health now?
- ▶ Respondents' information stockpile
 - How did your cancer diagnosis affect your family members?

More Considerations

- ▶ Clear simple language
 - Has your primary care physician prescribed opioids for you in the past month?
- ▶ Abbreviations, jargon, colloquialisms
 - What is your SES?

More Considerations

- ▶ Vagueness, ambiguity, confusion
 - I am anxious to help other cancer survivors.
 - What is your income?
 - Do you exercise regularly?
- ▶ Unwarranted assumption
 - Are you satisfied with your current health insurance?

More Considerations

- ▶ **Demanding**
 - What was the average cost of your prescription drugs last month?
 - What was the date of your last appointment with your primary care physician?
- ▶ **Biased, emotional, leading**
 - What should be done to improve the current dismal geriatric education curriculum offered in medical schools?
 - I assume you would agree that older cancer survivors' follow up cancer care should be maintained by oncologists and not primary care physicians.

More Considerations

- ▶ Double barreled
 - How often in the past month have you been bothered by anxiety and depression related to your cancer diagnosis?
 - Do you take prescription and over the counter medications for your arthritis pain?
- ▶ Double negative
 - It is not good practice not to record the education level of conference attendees.

More Considerations

- ▶ **Objectionable language**
 - Would you currently describe yourself as a cancer survivor, a cancer patient, an ex-cancer patient, or a cancer victim?
- ▶ **Mutually exclusive and all inclusive answer categories**
 - Income categories:
 - \$10,000 – \$20,000
 - \$20,000 – \$30,000
 - \$30,000 – \$40,000

Exercise– Question Critique

Item	Problem(s)?
The speakers and tours helped me learn more about a variety of professions and the medical field.	
The camp journal was helpful and had fun activities.	
The orientation & ice breaker activities helped me enjoy camp.	
Publicity and registration were satisfactory for this event.	
It was not useful not having access to a laboratory during the heart dissection.	
How many science classes and related field trips have you taken during middle school?	

**Adapted from AHEC Health Careers Camp
STUDENT EVALUATION (June 23-26, 2008)**

Exercise– Question Critique

* 8. Session Objectives: By the end of this activity, the participants will be able to:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Increase their knowledge of Arthritis Foundation Advocacy initiatives on the federal level.	<input type="radio"/>				
Identify resources available where there are barriers to care (access to care is limited), and to understand Medicare coverage.	<input type="radio"/>				
Discuss grassroots advocacy in relation to the Arthritis Foundation and review steps to communicate and build relationships with members of Congress.	<input type="radio"/>				

Problems?

Considerations of Validity

Learning Objective → Curriculum → Measure

Defining Validity

- ▶ The extent to which a test actually measures what it purports to measure.
- ▶ There are 2 forms we'll talk about today.
 - Face (simplest form)
 - Content

Face Validity

- ▶ Not sophisticated; based upon the “appearance” of a measure; does not require statistical analysis
- ▶ Ask yourself, “Do the items appear (on the face) to represent knowledge items from the educational program?”
 - It would not be wise to inquire on “knowledge of health literacy principles” on a pre-test, if those items were not going to be included in the session!

Content Validity

- ▶ Does not require statistical analysis, but requires a review of the areas/ concepts of the session covered
- ▶ Important consideration when delivering sessions in multiple sites using the same assessment
- ▶ Does the test or inventory broadly represent the universe of possibilities?
 - A post-test covering only 2/3 of the material presented would not be “content” valid

Building Stakeholder Relationships: Enhancing Instrumentation Validity

Face and Content validity (the most basic forms of validity)

Face: Does the instrument *appear* to measure what it “says” it measures, from the view of content experts?

Content: Does the instrument broadly represent all aspects of __? (knowledge about the session material, range of possible attitudes, etc.)

Fruit Cake #1	Fruit Cake #2	Fruit Cake #3
Dried cherries	Dried cherries	Dried cherries
Dried figs	Chocolate	Dried figs
Baking soda	Baking soda	Basil
Nutmeg	Nutmeg	Nutmeg
Cinnamon	Hamburger	Cinnamon
Sugar	Sugar	Sugar
Orange marmalade	Orange marmalade	Lemon marmalade
Grated orange zest	Grated orange zest	Grated orange zest
Flour	Flour	Flour
Egg	Egg	Egg
Hot brewed tea	Sprite	Hot brewed tea
Dried apricots	Dried apricots	Rice
Items represent fruit cake? Yes___ No ___	Items represent fruit cake? Yes___ No ___	Items represent fruit cake? Yes___ No ___

Superficial
(face)
validity:

A review of items should indicate what is being measured.

To What Degree Do Items Reflect Curriculum Components?

Not At All 1 2 3 4 5 Very Well

	<u>Content appears to reflect curriculum</u> (Yes, No, Uncertain)	List any suggestions for rewording here.
It is appropriate for physicians to use intuition (gut feelings) as a <u>major</u> factor in determining appropriate therapies for patients.		
The spiritual beliefs and practices of patients play an important role in healing.		
Quality of life measures are of equal importance as disease specific outcomes in research.		
Other content areas to include:	Area #1 Area #2	

To What Degree Do the Items Reflect the Learning Objectives?

Not At All 1 2 3 4 5 Very Well

<p>Learning Objective #1: Review the importance of holistic principles as a component of integrative medicine.</p>	<p>Rate on 1-5 Scale</p>	<p>List any suggestions for rewording here.</p>
<p>It is appropriate for physicians to use intuition (gut feelings) as a <u>major</u> factor in determining appropriate therapies for patients.</p>		
<p>The spiritual beliefs and practices of patients play an important role in healing.</p>		
<p>Quality of life measures are of equal importance as disease specific outcomes in research.</p>		
<p>Other items to include in meeting this objective:</p>	<p>Item #1 Item #2 Item #3</p>	

Fruit Cake #1	Fruit Cake #2
Dried cherries	Dried cherries
Dried figs	Dried figs
Baking soda	Nutmeg
Nutmeg	Cinnamon
Cinnamon	Sugar
Sugar	Orange marmalade
Orange marmalade	Grated orange zest
Grated orange zest	Flour
Flour	
Egg	
Hot brewed tea	
Dried apricots	
Items broadly represent fruit cake? Yes___ No ____	Items broadly represent fruit cake? Yes___ No ____

Content

validity:

A review by expert panelists should indicate the inclusiveness of the items.

Adapted from the Integrative Medicine Attitude Questionnaire (IMAQ)

Absolutely Disagree 1 2 3 4 5 Absolutely Agree

	Prior to Session (Pre) 1–5	Currently (Post) 1–5
1 It is appropriate for physicians to use intuition (gut feelings) as a <u>major</u> factor in determining appropriate therapies for patients.		
2 The spiritual beliefs and practices of patients play an important role in healing.		
3 It is acceptable for physicians to recommend acupuncture to patients with conditions like chemotherapy-related nausea and vomiting or headache.		
4 Quality of life measures are of equal importance as disease specific outcomes in research.		
5 The physician's role is to not only treat disease, but to address personal change and growth of patients.		
6 A strong relationship between patient and physician is an extremely valuable therapeutic intervention that leads to improved outcomes.		
7 Instilling hope in patients is a physician's duty.		
8 Counseling on nutrition should be a major role of the physician towards the prevention of chronic disease.		
9 Information obtained by research methods other than randomized controlled trials has value to physicians.		
10 Physicians who strive to understand themselves provide better care than those who do not.		

Add demographic items (workplace, discipline, etc.) as needed.

Conclusions

- ▶ Questionnaire development is a long process, involving extraordinary attention to detail.
- ▶ Questionnaires can be economic evaluation tools.
- ▶ Scaling can be tailored to match administration needs (pre/post or retrospective pre-tests).
- ▶ Instrumentation development can be used to engage content experts over the long term.

References

Greene, J. (2006) "Stakeholders." p. 397-8 in *Encyclopedia of Evaluation*, ed. by S. Mathison. Thousand Oaks, CA: Sage

Nassif & Khalil (2006). Making a Pie as a Metaphor for Teaching Scale Validity and Reliability. *American Journal of Evaluation* (27), p. 393-398.

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Thank you for participating!