Title:
Adapting or adopting an instrument for your study

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Date: 14 Sept 2013
Time: 9 am – 1 pm
Definition of a Research Instrument

• A research instrument is what you use to collect information (data) to answer your research question.
• It applies to both qualitative and quantitative approaches.
• It can produce quantitative and/or qualitative data.
<table>
<thead>
<tr>
<th>Objectives</th>
<th>Research questions and hypotheses</th>
<th>Data sources</th>
<th>Data collection methods</th>
<th>Data analysis methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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</tbody>
</table>
Choice of research instruments (1)

• Appropriate for your research objective and research question
• Able to produce a form of data appropriate to testing your hypothesis/hypotheses or addressing your research question(s);
  – The researcher has to decide whether the questionnaire (for example) measures what the study/research question wants to measure.
  – The research has to check whether the data collected using the instrument can be analysed to answer the research question.
Choice of research instruments (2)

• Practicable, given the time, resource constraints and the feasibility of using it within a chosen or given context;

• Ethically sound;

• Used appropriately, in the context of its original formulation and development;

• One you feel you are able to handle.
Examples of Research Instruments

• TOEFL proficiency test to measure comprehension level of respondents
• School exam papers (for general performance, or performance in specific subjects or specific topics)
• Public exam papers (general performance, specific skills e.g. oral skills)
• Scales to measure motivation level, level of acceptance of technology, metacognitive awareness of reading strategies, writing strategies
• Observation guidelines/protocol/checklist
• Interview guidelines/protocol (structured, semi-structured, unstructured, open-ended or closed, individual, group)
When you have found an instrument...

- Adopt - use without change, but with permission
- Adapt - with permission
- Get in touch with the original developer/s of the instrument.
- Enquire if there are later, revised versions of the instrument.
- Request for useful information regarding the instrument.
- Read up on how it has changed over the years. FLA horwitz2012.pdf
Different types of adaptation

• add more items
• delete some items
• delete and replace some items
• change the wording of the items (eg. from “Foreign language” to “English Language” or from “school staff” to “teachers”)
Process of checking an existing instrument

*(remember an instrument does not only mean the likert scale survey questionnaire)*

- check each item
- change some, add some, ...?
- perform content validity - let an expert see if all the items are valid (you must read up on validity of your instrument)
- check language clarity
- check reliability
An instrument is:

*Not valid if it is not reliable.*

*Reliable even if it is not valid.*

<table>
<thead>
<tr>
<th>Reliability</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability and consistency of measurement</td>
<td>Measures what it is supposed to measure.</td>
</tr>
<tr>
<td>An instrument measures the same way each time it is used with similar respondents (think of an exam paper...)</td>
<td>Content validity can be achieved through expert judgement.</td>
</tr>
<tr>
<td>Cronbach’s alpha coefficient – internal consistency by determining how all items relate to each other and to the total test</td>
<td></td>
</tr>
</tbody>
</table>
Pilot test

• Your instrument should be adequately piloted.
• Who should be the respondents in your pilot study? Similar to and not the intended sample.
• Do pilot test - clarity of items, reliability
• If the instrument is a likert scale type of questionnaire, run the Cronbach alpha test for reliability (see which item is problematic).
• If the instrument is an achievement test, you can perform a test retest on a sample.
Cronbach alpha results – Stages of Concern Questionnaire

<table>
<thead>
<tr>
<th>STAGE</th>
<th>SUBSCALE</th>
<th>NUMBER OF ITEMS</th>
<th>CRONBACH’S ALPHA VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>AWARENESS</td>
<td>5</td>
<td>.657</td>
</tr>
<tr>
<td>1</td>
<td>INFORMATIONAL</td>
<td>5</td>
<td>.838</td>
</tr>
<tr>
<td>2</td>
<td>PERSONAL</td>
<td>5</td>
<td>.938</td>
</tr>
<tr>
<td>3</td>
<td>MANAGEMENT</td>
<td>5</td>
<td>.789</td>
</tr>
<tr>
<td>4</td>
<td>CONSEQUENCES</td>
<td>5</td>
<td>.825</td>
</tr>
<tr>
<td>5</td>
<td>COLLABORATION</td>
<td>5</td>
<td>.844</td>
</tr>
<tr>
<td>6</td>
<td>REFOCUSING</td>
<td>5</td>
<td>.888</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>35</td>
<td>.887</td>
</tr>
</tbody>
</table>
**The reliability for the Awareness subscale is .657. In order to improve its value, Item 4 needs to be improved.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach’s Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don't even know that the Internet can be used in the teaching and</td>
<td>8.70</td>
<td>8.677</td>
<td>.488</td>
<td>.689</td>
<td>.591</td>
</tr>
<tr>
<td>learning of English</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am not concerned about the use of the Internet in the teaching</td>
<td>8.50</td>
<td>8.000</td>
<td>.572</td>
<td>.745</td>
<td>.550</td>
</tr>
<tr>
<td>and learning of English</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am completely occupied with other things that I do not think</td>
<td>7.75</td>
<td>6.500</td>
<td>.534</td>
<td>.395</td>
<td>.538</td>
</tr>
<tr>
<td>about the use of the Internet in the teaching and learning of English</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Although I don't know about the use of the Internet in the teaching</td>
<td>6.70</td>
<td>7.138</td>
<td>.293</td>
<td>.172</td>
<td>.699</td>
</tr>
<tr>
<td>and learning of English I am concerned about it (Item 4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At this time, I am not interested in learning about the use of the</td>
<td>8.45</td>
<td>8.972</td>
<td>.321</td>
<td>.128</td>
<td>.642</td>
</tr>
<tr>
<td>Internet in the teaching and learning of English</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What are your reasons for having a FB account? Examine the following items of an instrument to see their validity. (If you were to use this likert-scale questionnaire, which items would you keep?)

- I choose to have a FB account to keep in touch with old friends.
- I choose to have a FB account to make new friends.
- I choose to have a FB account to see what's going on.
- I choose to have a FB account to learn English.
- I want to survey what my friends do.
- I will tell my friends to use FB.
- FB can improve my reading.
- FB can improve my writing.
- I access FB at least once a day.
- I access FB at least once a week.
- FB is fun.
- FB is interesting.
The study of common errors in ESL essay writing: Examine the following items of an instrument to see their validity. (If you were to use this likert-scale questionnaire, [Always to Never] which items would you keep?)

- My students use grammatical structures correctly (adjectives, adverbs).
- My students show correct construction of SVO and SVA.
- My students use grammar correctly.
- My students use punctuation marks correctly.
- My students use the comma and fullstop correctly.
Validating your interview protocol

For each pair of questions, which one is better?

a. After being taught using this approach, can you tell me how it has benefited you?

b. After being taught using this approach, can you tell me how it has affected you?

a. What are the positive effects of this approach on your learning of argumentative writing?

b. What are the effects of this approach on your learning of argumentative writing?
Points to ponder:

• Do you have to make sure the instrument gives you the results that you want?
• Do you have to make sure the instrument gives you the type of data that you want?
• Would you develop an instrument from scratch? Again do not limit to the survey questionnaire only.
Useful websites


• http://people.uvawise.edu/pww8y/Resources/MERes/ResInstruments/00ResInstruments.html