The DASISH Questionnaire Design Documentation Tool (QDDT)

Benjamin Beuster, Hilde Orten (NSD)
ESRA17 – Lisbon, PT
July 17-21, 2017

License: CC BY 4.0 (exceptions see last slide)
Outline

• Why document questionnaires?
• The DASISH Questionnaire Design Documentation Tool (QDDT) – Current functionalities and examples from the ESS
• Further development
Why document the Question and Questionnaire development?

- Relevant information surrounding the questionnaire development
- Preserve information for the future to answer any questions about the questionnaire once the research is complete
- Reuse questions (metadata elements) for other researches
Inclusion of the term ‘challenging’ caused difficulties for some respondents in cognitive interviewing. However, we feel that reducing the item to ‘interesting’ only means that it is no longer sufficiently distinct from ‘Absorption’ or ‘Boredom’. We therefore propose dropping this item from the sub concept.

**CARD X** How often do you do things that you find interesting? Please use this card.

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>None or almost none of the time</td>
<td>01</td>
</tr>
<tr>
<td>Some of the time</td>
<td>02</td>
</tr>
<tr>
<td>Most of the time</td>
<td>03</td>
</tr>
<tr>
<td>All or almost all of the time</td>
<td>04</td>
</tr>
<tr>
<td>(Don’t know)</td>
<td>88</td>
</tr>
</tbody>
</table>

This item was not pre-tested but we feel that it is not sufficiently distinct from ‘Absorption’ or ‘Boredom’. We therefore propose dropping this item from the sub concept.

**SUB CONCEPT NAME: Boredom**

Describe the sub concept in detail outlining any further sub concepts or specifying that it can be measured directly

Feeling bored can be characterised as the opposite of feeling engaged in activities, hence low levels of boredom should be associated with high levels of engagement.
Data/Metadata Life Cycle

QDDT

Figure: Combined Life Cycle Model
The DASISH Questionnaire Design Documentation Tool (QDDT)

• QDDT documents the questionnaire design process from the first conceptualization to the final questionnaire

• Aim is to assist large-scale survey projects in their business processes related to questionnaire development
Workflow in the European Social Survey (ESS)
QDDT conceptual model, DDI 3.2

StatementItem

ControlConstruct

Instrument

Study

Universe

Concept

ResponseDomain

CodeDomain

CategoryDomain

DateTimeDomain

ScaleDomain

TextDomain

NumericDomain
Online tool

Menu to manage concepts, questions and response domain etc.

Open content of the survey

European Social Survey
V1.0

The European Social Survey (ESS) is an academically driven cross-national survey that has been conducted across Europe since its establishment in 2001. Every two years, face-to-face interviews are conducted with newly selected, cross-sectional samples.
Open content of the survey
Modules are research topics and consist of concepts and questions

Add description, information about author and upload documents
Body Mass Index (BMI)

Questions on weight and height will be included to obtain BMI. Obesity is associated with an increased risk of disease (e.g. diabetes, heart disease) and premature mortality (Robertson et al, 2006). A much less investigated but also less prevalent health problem in modern Western countries is underweight, which also has implications for health outcomes. BMI cannot be measured directly. Height and weight must be included as further sub concepts. The interviewers will not be required to calculate the respondent's BMI at the time of interview. A follow up question could be asked to those respondents who are unsure of their exact weight/height, to record their estimates (and reduce nonresponse). There may be within and between country variation in measurement units (kilos, stone, feet, metres, etc) – the questions allow for this.

Weight
Weight can be measured directly. No further sub concepts are necessary.

Height
Height can be measured directly. No further sub concepts are necessary.
<table>
<thead>
<tr>
<th>Question Name</th>
<th>Question Text</th>
<th>ResponseDomain Name</th>
<th>Modified</th>
<th>Version</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCHOBED</td>
<td>Overall, how fair are the chances for people in [country] to obtain the level of education they want to obtain – fair, or unfairly too low, or unfairly too high?</td>
<td>UnfairlyTooLow/High11</td>
<td>Thu Jul 06 2017</td>
<td>4.0</td>
<td>NSD-qddt</td>
</tr>
<tr>
<td>WRPWRCT</td>
<td>How worried are you that there may be power cuts in [country]?</td>
<td>Worried</td>
<td>Tue Jul 04 2017</td>
<td>1.0</td>
<td>NSD-qddt</td>
</tr>
<tr>
<td>cnfpplh</td>
<td>Using this card, please tell me how often there was serious conflict between the people living in your household when you were growing up?</td>
<td>Always5</td>
<td>Tue Jun 27 2017</td>
<td>1.1</td>
<td>NSD-qddt</td>
</tr>
</tbody>
</table>

Find questions

Select questions
Using this card, please tell me how often there was serious conflict between the people living in your household when you were growing up?

- Always
- Often
- Sometimes
- Hardly ever
- Never

Used by:

<table>
<thead>
<tr>
<th>Study</th>
<th>Module</th>
<th>Concept names</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESS Round 7 (2014)</td>
<td>Social inequalities in health and their determinants</td>
<td>Friction in family while growing up</td>
</tr>
</tbody>
</table>
Attitudes towards groups

Attitudes towards members of different religious groups

Add Questions to concepts
Attitudes towards groups

Attitudes towards members of different religious groups

Question Items

In general, do you think the following religions bring more or less conflict to society? (Christians)
In general, do you think the following religions bring more or less conflict to society? (Christians)

- Brings much more conflict
- Brings somewhat more conflict
- Brings neither more nor less conflict
- Brings somewhat less conflict
- Brings much less conflict

Missing
- Can't Choose
What else makes the QDDT special?

- Communication within the tool using nested comments
- Two level versioning system using RationaleCode
- Comparison of elements
Smoking

Tue Nov 22 2016 by admin@NSD-qddt

Tobacco is widely recognized as one of the most prominent causes of morbidity and premature mortality in Western Europe and North America. Each year, tobacco is responsible for approximately one fifth of all deaths (Danael et al., 2009). Tobacco smoking is associated with an elevated risk of ischemic heart disease, hypertension, cardiovascular diseases, respiratory diseases, and multiple forms of cancer. Additionally, passive smoking (i.e., inhalation of smoke) is related to a heightened risk of lung cancer.

Now thinking about smoking cigarettes. Which of the descriptions on this card best describes your smoking behaviour?
Smoking

Thu Nov 17 2016 by admin@NSD-qddt

Tobacco is widely recognized as one of the most prominent causes of morbidity and premature mortality in Western Europe and North America. Each year, tobacco is responsible for approximately one fifth of all deaths (Danaei et al., 2009). Tobacco smoking is associated with an elevated risk of ischemic heart disease, hypertension, cardiovascular diseases, respiratory diseases, and multiple forms of cancer. Additionally, passive smoking (i.e., inhalation of smoke) is related to a heightened risk of lung cancer.

admin@NSD-qddt - Tue Nov 22 2016

QDT1: concept "Smoking" can be measure by question "Smoking behaviour".

admin@NSD-qddt - Tue Nov 22 2016

QDT2: I agree. Shouldn't we rather use question "smokez1g" from ESS round 7?

admin@NSD-qddt - Tue Nov 22 2016

QDT3: Did you mean ESS round 8?
Make versioning easy!

\[ v^1.2 \]

Major Minor
Response Domains

Version 1.1

Change Display Layout

Trust scale

Trust scale Version:

<table>
<thead>
<tr>
<th>No trust</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Complete trust</th>
</tr>
</thead>
</table>

NSD©2016
Versioning in QDDT

- Saved as work in progress
- Saved as version
- Saved as new based-on

Save Comment
Display Layout changed

SUBMIT
Versioning in QDDT

Select the change type

Save as new minor version
Versioning in QDDT

Select the change reason and enter a save comment
## Compare to previous version

<table>
<thead>
<tr>
<th>#</th>
<th>Version</th>
<th>Compare</th>
<th>Timestamp</th>
<th>Reason</th>
<th>modifiedBy</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2573</td>
<td>1.0</td>
<td><img src="#" alt="diff" /></td>
<td>28 11 2016 08:44</td>
<td>CREATED</td>
<td>admin</td>
<td></td>
</tr>
<tr>
<td>2574</td>
<td>2.0</td>
<td><img src="#" alt="diff" /></td>
<td>28 11 2016 08:46</td>
<td>ADDED_CONTENT</td>
<td>admin</td>
<td>Question intent added</td>
</tr>
<tr>
<td>2575</td>
<td>2.1</td>
<td><img src="#" alt="diff" /></td>
<td>28 11 2016 08:47</td>
<td>TYPO</td>
<td>admin</td>
<td>Question intent: text corrected</td>
</tr>
<tr>
<td>2578</td>
<td>3.0</td>
<td><img src="#" alt="diff" /></td>
<td>28 11 2016 08:49</td>
<td>ADDED_CONTENT</td>
<td>admin</td>
<td>Missing Value added</td>
</tr>
</tbody>
</table>
### Version 2.0 vs Current Working Version

<table>
<thead>
<tr>
<th>Version 2.0</th>
<th>Current Working Version</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td>Smoking</td>
</tr>
<tr>
<td><strong>Quest</strong></td>
<td>Now thinking about smoking cigarettes. Which of the</td>
</tr>
<tr>
<td><strong>Intent</strong></td>
<td>Measuring the smoking behaviour</td>
</tr>
<tr>
<td><strong>resp</strong></td>
<td>Smoking</td>
</tr>
<tr>
<td><strong>RespD</strong></td>
<td>V1.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>#</th>
<th>Version</th>
<th>Compare</th>
<th>Timestamp</th>
<th>Reason</th>
<th>modifiedBy</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2573</td>
<td>1.0</td>
<td></td>
<td>28 11 2016 08:44</td>
<td>CREATED</td>
<td>admin</td>
<td></td>
</tr>
<tr>
<td>2574</td>
<td>2.0</td>
<td></td>
<td>28 11 2016 08:46</td>
<td>ADDED_CONTENT</td>
<td>admin</td>
<td>Question intent added</td>
</tr>
<tr>
<td>2575</td>
<td>2.1</td>
<td></td>
<td>28 11 2016 08:47</td>
<td>TYPO</td>
<td>admin</td>
<td>Question intent: text corrected</td>
</tr>
<tr>
<td>2578</td>
<td>3.0</td>
<td></td>
<td>28 11 2016 08:49</td>
<td>ADDED_CONTENT</td>
<td>admin</td>
<td>Missing Value added</td>
</tr>
</tbody>
</table>
Publish metadata elements

- Create a publication package
- Select a publication status
- Find elements from data base
- Select version
Package name

Select publication status

Expand the element
**Question Item**

Version: 4.0

Name: Smoking

Question Text: Now thinking about smoking cigarettes. Which of the descriptions on this card best describes your smoking behaviour?

**Intent:** We want to measure smoking consumption

<table>
<thead>
<tr>
<th>category scheme for Smoking Version:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I smoke daily</td>
<td>1</td>
</tr>
<tr>
<td>I smoke but not every day</td>
<td>2</td>
</tr>
<tr>
<td>I don't smoke now but I used to</td>
<td>3</td>
</tr>
<tr>
<td>I have only smoked a few times</td>
<td>4</td>
</tr>
<tr>
<td>I have never smoked</td>
<td>5</td>
</tr>
</tbody>
</table>

**Missing**

| (Don't know) | 88 |
• Tool in production since June 17
• QDT develop questions for ESS9 (Sept. 17)
• Generate PDF and DDI 3.2 XML
• Add instrument option and question grid
Thank you for your attention

Special thanks to:

Knut Kalgraaff Skjåk, Stig Norland (NSD),
Sarah Butt, Virginia Ros (ESS HQ, City University),
Joachim Wackerow
License

This presentation is offered under license CC-BY 4.0

The license does not apply to the following copyrighted material used in this presentation:

The logo of NSD:

The logo of SERISS:

The logo of DASISH:
QDDT conceptual model, DDI 3.2

StatementItem → ControlConstruct → Instrument

QuestionAsInInstrument → Universe

QuestionItem

QuestionGrid

ExternalAid

Instruction

ResponseDomain

CodeDomain

CategoryDomain

DateTimeDomain

ScaleDomain

TextDomain

NumericDomain

Concept

Study

CategoryDomain

DateTimeDomain

ScaleDomain

TextDomain

NumericDomain
QDDT Architecture

Angular 2 + Typescript
- No Javascript in dev tools, only in browser
- Typescript can transpile to ES3
- Supports «evergreen» browsers (Chrome, FireFox, Opera, Safari, and IE10/11)

Spring MVC API
- RESTful API
- JSON for free
- no need for a SOAP service stack

Spring security (OAuth2)
- Tokenbased
- No state for requests

Persistence Layer implemented with Hibernate + Envers
- Revisions
- Database agnostic
- Since qddt is open source, we chose Postgres