Michigan Questionnaire Documentation System V3

Karl Dinkelmann
University of Michigan
12th International Blaise Users Conference
Riga, Latvia – June 2 - 4, 2009
Overview

- Guiding principles
- Driving factors
- Technologies used
- Import-Export-Transform (IET) process model
- Extension possibilities
- Concluding remarks
- Demo (perhaps during break)
MQDS V3 Guiding Principles

- Address limitations identified in previous versions of MQDS
- Validate to the new Data Documentation Initiative (DDI) V3 standard; exploiting new and expanded features
- Move from the “in memory” processing model to a streaming to a relational database model
- Allow users greater flexibility of extending MQDS to meet the needs of their project teams
- Process Blaise instruments of any size
- Address previously requested “wish list” items
MQDS V2 Limitations

- **Performance:** Was unable to completely process large complex instruments
- **Finality:** All items in final output had to be selected at runtime
- **Extensibility:** Hard to implement other supporting tools, wrote directly to XML without an intermediate step
- **Limitations in MQDS V2:** Wasn’t DDI V2 compliant (was quasi-DDI V2; needed items were not in DDI V2)
The DDI V3 Standard

- Data Documentation Initiative: an international XML standard
- Released Version 3.0 April 2008
- V3 shifts from codebook documentation to life cycle documentation
- Considerable expansions for the CAI instrumentation process
- At what cost...
Data Documentation and Dissemination Project

- Joint project between Interuniversity Consortium for Political and Social Research (ICPSR) and Survey Research Operations (SRO)
- Core product for SRO MQDS V3 Database
  - Modeled after DDI V3
  - Takes the best of previous versions of MQDS and instrument documentation found in DDI V3
- A look at the *Enterprise Architect* MQDS V3 entity-relationship (ER) diagram...
- (Wake up Arno!)
MQDS V3 Technologies Used

- Microsoft Visual Studio 2008 .NET
- C# .NET
- .NET framework 3.5
- Microsoft Enterprise Library 4.0
- Microsoft SQL Server Express (2005/2008) and SQL Server Management Studio
- Enterprise Architect
- Oxygen XML Editor
- Blaise 4.8.x BCP (BIAPI3A.DLL)
MQDS V3 IET Process Model
Import Component

SQL Server / SQL Server Express

1. Import

User specifies Instrument Data & Metadata

Blaise Datamodel (BMI)

Blaise Database (BDB)

Database connection settings

Other File Types (e.g. SAS, SPSS, etc)

March Blaise Language Settings to ISO Language/locale

DDI 3 elements not in *.bmi via Profiles
Transform Component

User specifies DDI V3 Instance:
output location, Fill names or resolved,
formatted or unformatted, languages, etc.

User specifies DDI file to transform:
output location, stylesheet selection
criteria, output desired html, rtf, or
pdf, etc.

1. Import

2. Export

3. Transform

Relational Db

XML (DDI 3)

User specifies DDI Instrument
Data & Metadata

Output location, Fill names or resolved,
formatted or unformatted, languages, etc.

Other File Types
(e.g. SAS, SPSS, etc)

March Blaise
Language
Settings to ISO
Language/locale

DDI 3 elements
not in *.bmi via Profiles

Blaise Datamodel
(BMI)

Blaise Database
(BDB)

Database
connection
settings

Questionnaire

Codebook
MQDS IET Process Model

User specifies DDI V3 Instance: output location, Fill names or resolved, formatted or unformatted, languages, etc.

User specifies DDI file to transform: output location, stylesheet selection criteria, output desired html, rtf, or pdf, etc.

1. Import

Relational Db

2. Export

XML (DDI 3)

3. Transform

SQL Server / SQL Server Express

Blaise Datamodel (BMI)

Blaise Database (BDB)

Database connection settings

Other File Types (e.g. SAS, SPSS, etc)

March Blaise Language Settings to ISO Language/locale

DDI 3 elements not in *.bmi via Profiles

User specifies Instrument Data & Metadata

Questionnaire

Codebook
New Possibilities of Extending V3
Extended use of the Blaise language setting for instrument versions, online help content, metadata language, etc.

- Being syntactically correct does not mean that one is semantically correct.
- Perhaps adding a Mode variable to Blaise
- Adding a way to capture questions concepts, perhaps via meta-metadata tags...
Known Limitations: DDI V3

- Means of documenting items such as alien procedures and routers
- Currently waiting on Version 3.1 for a bug fix relating to formatted text found in questions, response options, etc.
- We will find more bugs!
- Paradata documentation
- Conceptual Component
- A standards body is only as good as its user base.
Possibilities of MQDS versions of the future include:

- Grouping and comparison of instruments
- Better ways of visualizing the DDI v3 ControlConstruct
- Versioning
- Interface with data archives for seamlessly direct data depository and dissemination of instrument documentation
- ...

Barely Scratching the Surface
Concluding Remarks

- The “bleeding edge” (Hart, 2009)
  - Usage of DDI V3...
    - Minimum documentation, lacking complex examples
- Reusing code
  - Complex areas of code were completely rewritten

Simple things should be simple, complex things should be possible.

The only way to predict the future is to invent it
– Alan Kay
**Acknowledgments**

- **V3 Development Contributions**
  - Gina-Qian Cheung
  - Sheila Deskins
  - Karl Dinkelmann
  - Nathaniel Doran
  - Nicole Kirgis
  - David Padot
  - Ruth Philippou
  - Peter Sparks
  - Isabella Yeh

- Special thanks to the ICPSR team for their collaborative efforts in during the data dissemination and documentation project.

- As well as the many MQDS team members that have worked on the system over the past 5+ years.
Thank you & Questions?
References


Statistics Netherlands and Westat are currently evaluating MQDS V3 and working on a distribution plan. They will have more information as soon as possible.
MQDS V3 Beta Demo

MQDS V3 TEST.Ink