

Beyond Results Small Group Work

**Log-data and Items
Documentation – Group 1**

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Data user (e.g., researcher) perspective

- 1) What kind of documentation of log data (events) is needed for your research based on log data?**
- 2) What kind of documentation of (test, questionnaire) items is needed for your research based on log data?**
- 3) How to integrate both documentations? For instance, how to map log events to interactive elements within a particular item?**
- 4) What are other challenges for creating log data documentation / item documentation and potential solutions/best practices?**
- 5) What further documentation is required from a data user perspective?**

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1) What kind of documentation of log data (events) is needed for your research based on log data?

- A poor log documentation (e.g., outdated, poorly designed) may not be useful for users, and probably bear high effort and cost behind. We would need to stress to make careful checking to ensure the usefulness for users rather than wasting.
- More concrete details, esp. the description of variables, are well appreciated in the log documentation. For instance, variables labeled in log documentation should completely match with the log data file. How variables were defined and developed should be reported as well.
- The meaning of log events, navigation patterns, clicks need to be clearly defined in the log document.
- The information that failed to be captured in the system (e.g., values in the drag-drop items) would need to be clarified in documentation to save the efforts from further exploration.

2) What kind of documentation of (test, questionnaire) items is needed for your research based on log data?

- It is challenging to analyze unreleased items. From the BQ questionnaire, it would also be helpful to include how students make interactions.
- Item structure constrains (e.g., navigation constrains) need to be recorded in the log documentation. For instance, researchers would need to know how students make the transition, whether they are restricted to go back and forth, skip items, jump to different items or have to only use back/forward buttons.
- Item structure constrains
- Collateral information such as computer crashes, speed, and information about tech issues.

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3) How to integrate both documentations? For instance, how to map log events to interactive elements within a particular item?

- Interactive elements and documentation need to go along with each other, for instance, using video techniques.
- Mapping log events to interactive elements from the very beginning.
- Build up wikidictionary to get across source documents
- Mock items development, not only to reproduce superficial entries, but also employ features of the task. However, mock items may not completely replace real tasks. Challenges may come from text features, e.g., sentence length, position of sentences. How the mock items are created and developed needs to be included in log documentation.

4) What are other challenges for creating log data documentation / item documentation and potential solutions/best practices?

- Video shot would a good solution for visualizing existing item tools.
- Cross source documentation, wiki-dictionary, open source sharing would be a trend to build up log documentation. Crowdsourcing may also be able to deal with maintenance problem.
- The procedure of variables development (e.g., total response time), variable definition, algorithms should be included in the log documentation.
- The procedure of data cleaning, data or variables that have been removed from the published log data file should also be included in the documentation for data validation purpose.

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5) What further documentation is required from a data user perspective?

- **Item structure documents are in demand, esp. context event for specific item related to the content of the log event.**
- **Document for time-stamped action sequences**
- **Document for actions that have been isolated and activated.**