Improving the User-friendliness of AAT through a Staged Evaluation
The Academic Analytics Tool (AAT) allows educators without technical expertise to extract and analyse data from learning management systems to foster responsive analysis and improvement of online courses.
why aat?

Online education is growing at a tremendous pace

Educators need timely, ongoing access to information about how students interact with online courses and learning materials
why aat?

Learning Management Systems (LMSs) store large volumes of data about how students interact with online resources.

Educators need tools to extract LMS data to analyze student behavior and the suitability of teaching strategies and course designs.
why aat?

Current tools to access LMS data require high technical skill, or are too limited in scope

Learning analysts call for data extraction tools specifically designed for educators and learning designers
aat is usable

Our tool builds complex queries using a wizard interface anyone can use
aat is unlimited

AAT BUILDS QUERIES WITHOUT LIMITS

ALL DATA IN THE LMS IS ACCESSIBLE
AAT uses a **customized ontology** to express database entities in terms meaningful to users without technical backgrounds.
AAT aims to work with any LMS or database: TEMPLATES make it portable.
AAT templates direct the tool to the correct database tables and columns for any LMS
improving usability

The latest stage of AAT development aims to improve the user-friendliness of the tool.
improving aat

A staged qualitative evaluation on the first version of the tool focussed on AAT’s user-friendliness.
improving aat

Evaluation was in two phases:
• a demo explained AAT’s aim and functions
• hands-on exercises ranged from simple to complex and a solution manual helped users assess their success
improving aat

After each phase
researchers collected
and analysed
user feedback
improving aat

the next AAT revision incorporated FEEDBACK and IDEAS from users
usability feedback

STAGE ONE feedback focused on three interface factors:
- interface layout
- Concept presentation
- lack of help text
usability feedback

FEEDBACK

Users commented on general user interface aspects, noting that button positioning was unintuitive, as was the sequence of columns in the result pane.

They also suggested SQL queries should be hidden by default.

RESPONSE

AAT’s user interface has been significantly improved to ensure a consistent design on all pages. SQL view can be toggled on and off.
usability feedback

**FEEDBACK**

Users felt the presentation of Concepts in the Pattern creation process was confusing, and offered four recommendations for improvement.

**RESPONSE**

The presentation of concepts has been revised based on the feedback.
usability feedback

FEEDBACK
Users asked for contextual help to make AAT’s functions easier to understand.
They also suggested tweaking AAT’s ontology to use more intuitive terms.

RESPONSE
We added help text to a side panel on every page, and tool tips to many buttons and selectors.
We renamed some steps so they are easier to understand (e.g., “profile” is now “project”)

EVALUATION
Phase One
STAGE TWO
feedback focused on four topics including advanced features:

• navigation issues
• the user guide
• extensions to existing functions
• DataSet interface improvements
usability feedback

**FEEDBACK**
After our first usability update users felt pages were looking too similar and were easily confused and they critiqued the user guide and made suggestions for improvement.

**RESPONSE**
We have simplified some of the steps and numbered all of the pages to make it more clear where users are in the process. The User Guide has been completely updated and sample exercises are available for training sessions.
**usability feedback**

**FEEDBACK**

Users made six suggestions for extensions to AAT’s functionality including providing visualizations of the results, and default patterns for new users to start with.

**RESPONSE**

AAT is nearly readiness for a full launch; new functions will be developed as we move into the next stage of revisions.
usability feedback

FEEDBACK
Users made five suggestions for improvement of the DataSet interface to make selection easier with very long lists of courses.

RESPONSE
We modified the interface to sort all courses alphabetically, rather than grouping by database, and added functionality to batch-select courses.
AAT screenshot previews
The Project Manager provides access to saved Projects and is the starting point for all AAT explorations.
A new Project begins with a name and a description.
A single LMS must be chosen for each project. If a given institution has more than one LMS in use, they can all be linked through AAT.
Next, a **DataSet** (list of courses) is built from among those available in the chosen LMS. Batch-selection options make it quick to choose a range of courses from the same subject area.
Pattern builder (a)

Patterns define the tables (Concepts) and columns (Attributes) for each investigation. Concepts are given names meaningful to educators.
Attributes include a wide range of information stored in table cells. To help users understand the information they are selecting, a sample results window displays a few examples of each selected column.
Pattern builder (c)

As a final step, a Pattern can be given Limits – functions that filter data for more precise results.
Pattern manager

After completing a Pattern, users return to the Pattern Manager where they can access additional functions (e.g., analytical functions) or select a Pattern to view details and results.
Project details

Full details of each Project are available for viewing to remind users of their selections and for the convenience of other users accessing public Patterns.
Project manager

The results of a Project can be output to HTML, XML or PDF table format, or they can be viewed in a live table on screen with options for simple filtering and sorting. The output screen also shows the SQL statement.
More information of AAT

http://www.academicanalytics.ca/
Improving the User-friendliness of AAT through a Staged Evaluation