ATLAS.ti 25: Distinguishing features

This document is intended to be read in conjunction with the 'Choosing a CAQDAS Package Working Paper' which provides a more general commentary of common CAQDAS functionality. This document does not provide an exhaustive account of all the features provided by ATLAS.ti 25 but is designed to highlight some of its distinguishing elements, focusing on those available in the desktop version. The Comment section at the end details our opinions on certain aspects of functionality and usability.

Background

http://www.atlasti.com ATLAS.ti was initially developed as part of a research project at the Technical University, Berlin (1989), by Thomas Muhr (then lead developer and CEO of ATLAS.ti Scientific Software Development GmbH), and colleagues ■ ATLAS.ti was acquired by Lumivero LLC in 2024 ■ A license includes access to the Windows, Mac, and Web versions (unless users opt for a web-only license) ■ Projects can be transferred back-and-forth between the Windows, Mac, and Web platforms. For full feature comparisons see https://atlasti.com/feature-comparison. The remainder of this review focusses on the Desktop version unless stated otherwise.

Minimum System Specifications (recommended by developers)

Windows: Minimum Windows 10 Version 1607, "Anniversary Update." 64bit Ram – 4GB minimum / 8-16GB is strongly recommended. 1.5GB free hard disk space. Intel-based PC, 2GHz, Intel core or compatible CPU. Mac: OS version 12.4 'Monterey' or higher ■ At least 8GB RAM, SSD is recommended. See https://atlasti.com/product/technical-info/

Structure of work in ATLAS.ti 25

The core entities of ATLAS.ti projects are Documents, Quotations, Codes, Memos, Networks, and Links ■ Documents contain data for analysis ■ Quotations are segments of data within documents identified as meaningful ■ Codes are labels applied to quotations to represent concepts ■ Memos are project-related notes that are separate from but can be connected to data ■ Links create connections between entities to facilitate visualization and analysis ■ Relations describe the nature of links and are defined by the user ■ Networks are visual representations of the connections ■ Groups of documents, codes, memos, and networks facilitate project organization and analysis ■ Text files, PDF files, and images are stored as copies within the project, while audio or video files can be stored externally ■ ATLAS.ti Desktop projects can be saved in cloud storage for access across devices and users, or exported as a project bundle for sharing amongst teams ■ ATLAS.ti Web projects are saved online and facilitate live collaboration for teamwork ■ The Project Explorer lists the major project entities ■ Entity Managers and project entities can be accessed from the Project Explorer ■ Managers and entities can be viewed in tabbed or floating windows ■ Menu tabs and their associated ribbons across the top of the screen display functions relevant to the current focus

Data types and format in ATLAS.ti 25

Text files (including Word documents with comments, PDFs with annotations, PowerPoints, etc.) ■ Image files (e.g., photographs, visual data, etc.) ■ Video / audio files (e.g., recordings of interviews, focus groups, and observations, which can be imported and synchronized with corresponding transcripts) ■ Survey data (e.g., Excel spreadsheets from survey software can be imported and automatically organized into documents, codes, and groups) ■ In addition, data can be imported from reference management programs (Endnote, RefWorks, etc.) and Evernote documents ■ Geo documents (e.g., interactive world map in which locations can be searched, marked, and analyzed) ■ Social Network data including from Facebook, "X"/Twitter, Instagram, YouTube, TikTok, VK, Twitch and Discord ■ ATLAS.ti Web has integrated Paper Search 2.0, enabling searching, citing and integrating of journal articles into the ATLAS.ti Web workspace (which can then be imported into ATLAS.ti Desktop if needed).

Closeness to data and interactivity in ATLAS.ti 25

Entities can be taken out of their original context (e.g., quotations can be viewed independently from the documents in which they occur) and

analyzed on their own ■ Viewing a particular entity also displays all connected entities (e.g., viewing a quotation shows its applied codes, viewing a code lists quotations linked to that code, etc.) ■ Managers and groups list their respective entities ■ Full interactivity exists within the network view and between other project entities (e.g., documents, quotations, codes, memos, comments, and networks)

Figure 1. The ATLAS.ti 25 Windows user interface, showing the main elements of the interface

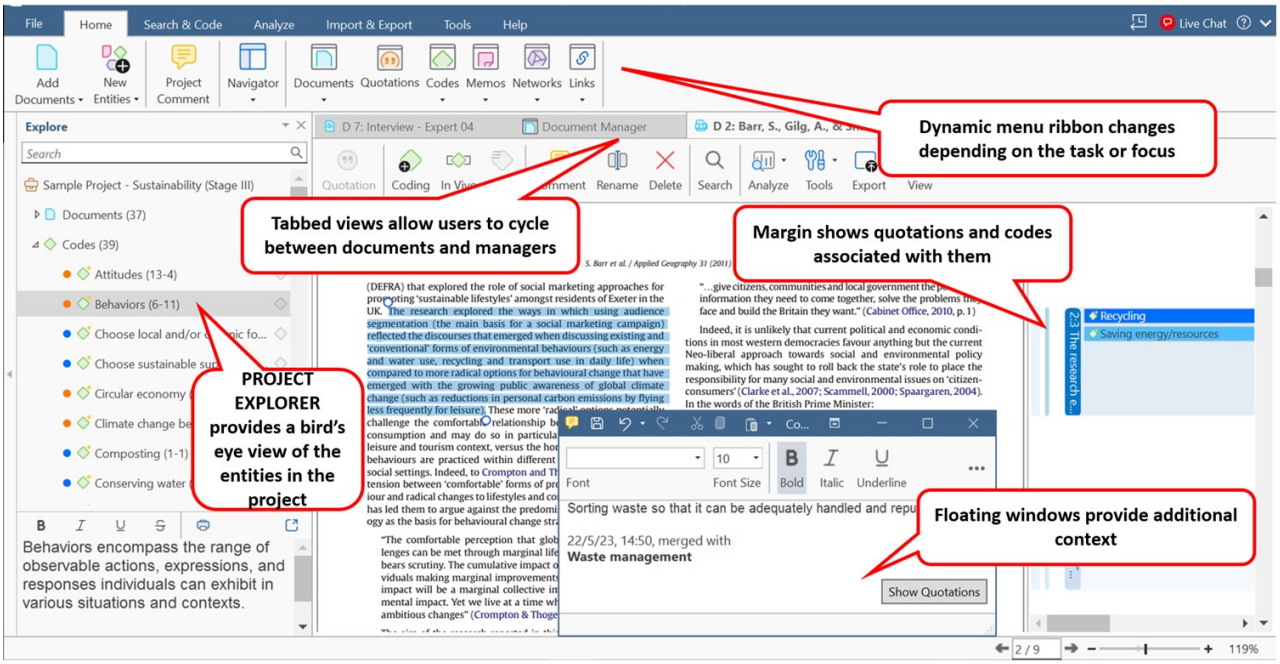
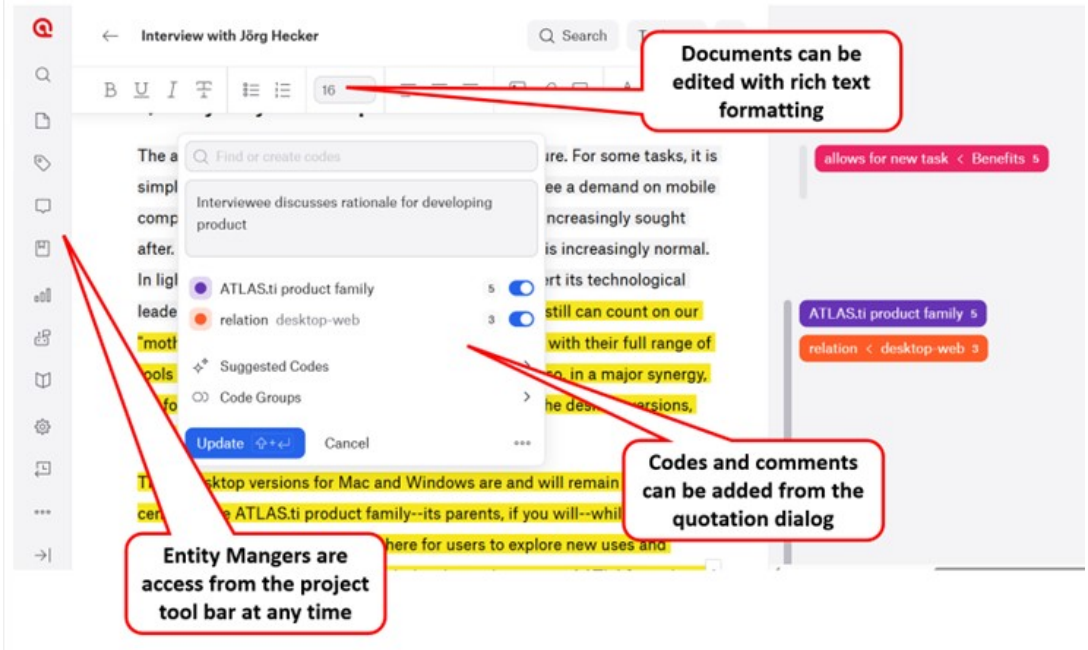


Figure 2. Some of the common elements of the ATLAS.ti Web interface



Handling multimedia data in ATLAS.ti 25

Audio-visual data can be directly added, annotated, coded, and synchronized with transcripts ■ A document preview is displayed under the moving image ■ Preview images of key frames and the audio wave are displayed alongside the moving image ■ Image snapshots can be created from video documents ■ Audio/video data files can be synchronized with corresponding written transcripts through the use of timestamps ■ Transcription tools that generate

timestamps for transcripts in .txt, .rtf, .docx, .srt or .vtt formats allow for synchronization between multimedia files and transcripts. Transcripts can be generated manually inside the software, or via the AI AutoTranscription tool.

Coding schema in ATLAS.ti 25

Codes can be organized into categories, sub-codes, code groups and folders ■ Categories represent broad units of meaning that contain more discrete sub-codes ■ Subcodes reflect discrete codes within a single category, and all sub-code quotations are aggregated under the category code ■ Code folders create hierarchical structure containing codes, categories and subcodes ■ Code groups enable collections of codes to be created, and any code can belong to any number of groups ■ Codes can be filtered by multiple criteria to display selected codes ■ Smart codes can be created from combinations of codes by using a query (e.g., AND, OR, ONE OF, NOT operators). These can be transformed into a snapshot code to fix elements of the code system ■ Smart code groups can be created to group together code groups and these can be turned into snapshot groups ■ Codes can be linked to one another to impose additional structure on the coding schema, or to illustrate analytic relations (e.g. *is associated with, is a cause of* etc.) ■ Links between codes can be visualized in a Network or the Project Explorer

Coding processes in ATLAS.ti 25

Coding is enabled by linking quotations to codes. This can be achieved in several ways, including drag-and-drop, list coding, open coding, coding *in vivo,* and within networks ■ The document margin view displays quotations and linked codes, memos, other quotations, code groups, memo groups, and networks ■ The margin view display can be filtered, and codes, comments, and memos can be edited from it

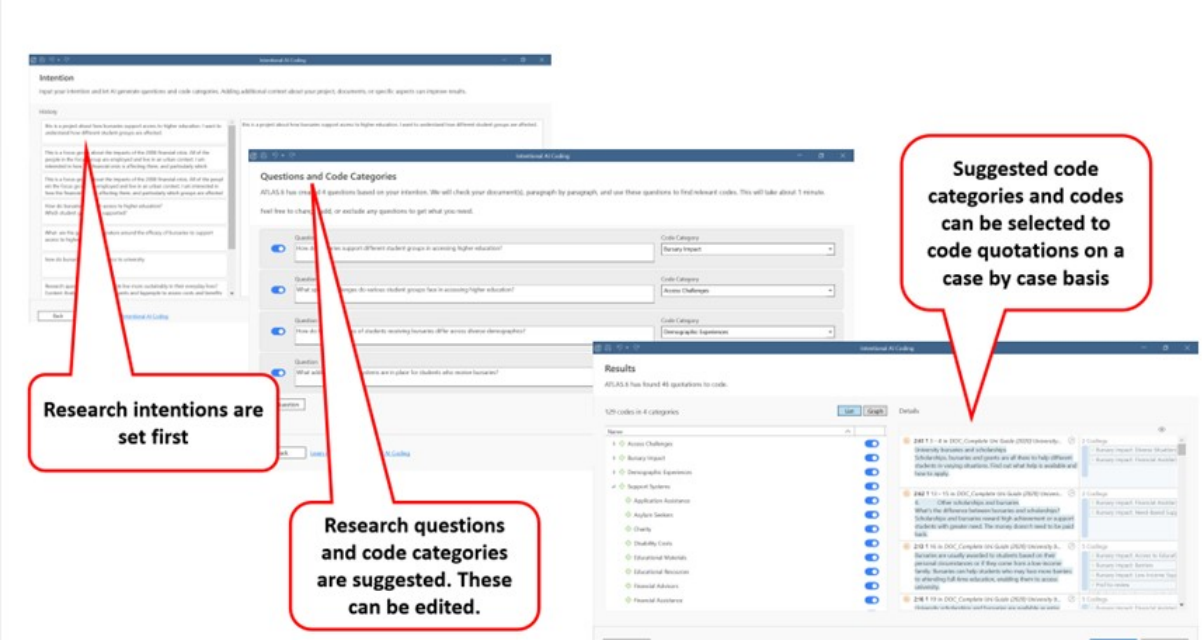
Searching and auto-coding processes in ATLAS.ti 25

Word frequencies can be analyzed as clouds or lists and filtered by parts of speech ■ Search results can be assigned multiple codes simultaneously ■ Text Search and Regular Expression Search identify and code text based on keywords (including synonyms, inflected forms, etc.) or search strings. Advanced lemmatization and synonym support allows for "fuzzy" text search (e.g. finding "woven" when searching for "weave") ■ Named Entity Recognition applies codes to proper nouns (i.e., names of people, places, organizations, etc.) ■ Focus Group Coding searches for patterns based on speaker identifiers in transcripts ■ Sentiment analysis applies codes to indicate the feeling or tone expressed in segments of text (positive, negative, and neutral sentiments) ■ Opinion mining can code for what is being talked about (e.g., nouns and verbs) and what kind of opinion is expressed about each (positive or negative) ■ Concepts search analyzes and can code for noun phrases to identify concepts and sub-concepts ■ Generative AI features (including AI Coding, Intentional AI Coding and AI Code Suggestions also allow for coding to take place (see more below)

AI-based features in ATLAS.ti 25

ATLAS.ti 25 offers several tools that allow users to utilize generative artificial intelligence within their research, with models powered by OpenAI ■ AI Coding applies descriptive codes to selected text and document(s) (the number of resulting categories can be adjusted) ■ AI Suggested codes offers ideas for codes to apply to selected segments of text – either codes that have already been created, or new codes ■ Intentional AI Coding suggests codes based on research intent, questions and selected category code names inputted by the user ■ AI Summaries provide syntheses of selected documents, coded quotations, document groups or quotations coded from a group which can be saved in memos ■ Conversational AI allows for "chatting" with a document, yielding quotations that can be coded.

Figure 3. Intentional AI Coding suggests codes based on research intentions and research questions provided by the user



Basic retrieval of coded data in ATLAS.ti 25

Coded data can be retrieved in documents, entity managers, analysis tools, and via exports such as text or spreadsheet reports and visual displays ■ The margin display provides an overview of how documents are coded in their entirety ■ Filtering by code groups and/or document groups focuses the view of data to relevant subsets of codes or data ■ Analyze and export coded data by outputting, querying, or visualizing in a network view ■ Quotations in any retrieval list can be opened in their original context to maintain closeness to source data.

Data organization in ATLAS.ti 25

Organizing whole documents for the purpose of filtering to subsets or querying is achieved by creating document groups (e.g., socio-demographic groupings such as gender, age group, marital status, etc.) ■ Functionality replicates that for organizing codes and memos ■ The smart group tool allows combinations of groups to be created (using AND, OR, ONE OF, NOT operators) and saved ■ Smart groups are dynamic so that as more documents/codes are added to the original groups the smart groups automatically update ■ Document group structure can be implemented via the survey import feature ■ Organization of parts of documents (e.g., speaker sections in focus-groups) can be achieved manually or with auto-coding.

Writing tools in ATLAS.ti 25

Text documents can be imported into or created within a project and directly edited ■ Memos provide spaces for writing about any aspect of work, for example research questions and researcher reflections ■ The content of several memos can be outputted into one file ■ Memos can be linked to quotations, codes, and other memos ■ Memos can be converted into documents to be coded ■ Links created between memos and other objects are functional in that visualizing them in a Network view will illustrate any other linked items ■ Comments can be attached to all project entities (e.g., codes, documents, quotations, project, etc.)

Interrogating data in ATLAS.ti 25

Global Filters allow the display of data to be focused on selected entities (e.g. groups of documents and codes) ■ The Query Tool retrieves quotations based on applied presence, absence, co-occurrence and proximity relationships between quotations, narrowed to documents or groups of documents ■ Smart Codes are saved queries listed as codes that dynamically update ■ Smart codes can be part of another query, which itself can become a smart code, enabling up-to-date navigation around complex combinations of coded data ■ Co-occurrence Analysis retrieves quotations based on overlapping coded data segments ■ Code-Document Analysis retrieves quotations containing certain codes within selected documents ■ Co-occurrence Analysis and Code-Document Analysis determines frequencies of code-code and code-document relationships and produces corresponding visualizations (e.g.,

Sankey diagrams, tables, bar charts, force-directed graphs) ■ Networks can also be used to visually interrogate connections (see below) ■ Reliability of coding across teams can be tested using Intercoder Agreement Mode

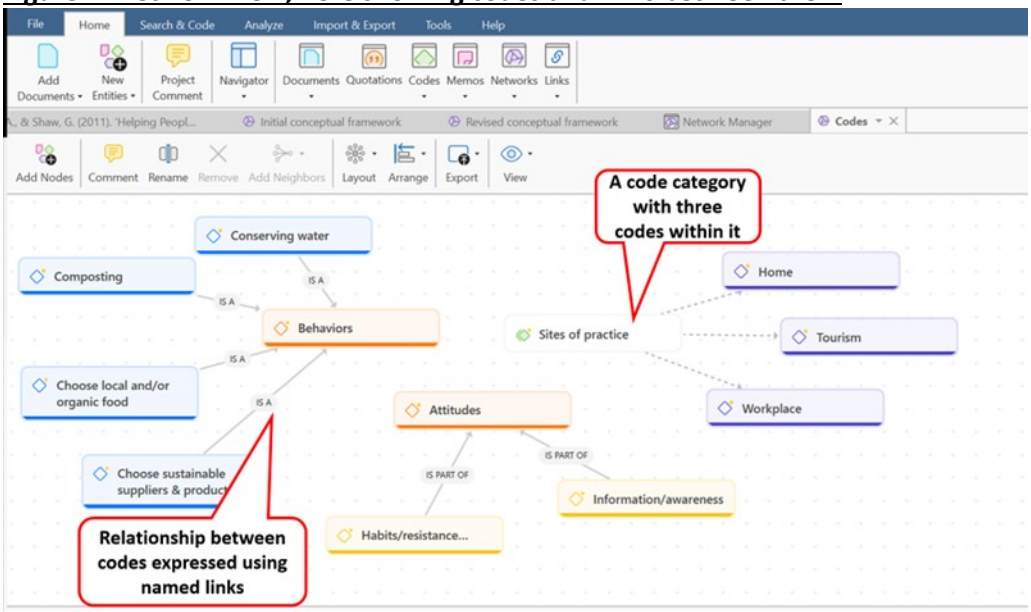
Linking devices in ATLAS.ti 25

Linking is flexible in ATLAS.ti in that almost any entity can be linked to any other ■ Linking is functional in that subsequently opening a network on a linked object will automatically show other objects linked to it ■ Hyperlinking between points in the data (i.e., quotations) allows the tracking of sequence or process within or between data files without abstracting to the coding level ■ User-defined relationships can be created between hyperlinked quotations, as well as between codes.

Output in ATLAS.ti 25

The Report tool allows aspects of work to be exported from Entity Managers ■ Reports can be saved in different formats and filtered for focused output ■ Predefined reports are available in the Query Tool ■ The whole project can be exported as an SPSS syntax file or Excel file to undertake further statistical analysis ■ The whole project can be exported in QDPX format (a common exchange format that can be imported into other CAQDAS packages).

Figure 4. Network view, here showing codes and links between them



Visual tools in ATLAS.ti 25

Bar charts displays the frequency of quotations from within the Code Manager and Document Manager and by documents within the Code-Document Analysis table and co-occurring quotations in a Code Co-occurrence table ■ Data displays are interactive, showing underlying quotations when selected ■ Code Co-occurrence Analysis and Code-Document Analysis results can also be visualized as an interactive table, Sankey diagram, bar chart, or a force-directed graph ■ Tree Maps and Code Clouds visualize code distributions ■ Networks, available in multiple layouts, provide a space for visualizing and working with all project items, including codes, code hierarchies, code folders, documents, quotations, links, etc.

Teamwork in ATLAS.ti 25

Teamwork is enabled by each user working on separate copies of a common project, which are then merged to combine work ■ ATLAS.ti supports teamwork across Mac and Windows desktop versions ■ Cloud save function allows for remote project work across devices ■ ATLAS.ti Desktop projects can be imported into ATLAS.ti Web and vice versa ■ The Web version allows

multiple users to work on projects in real time ■ The Desktop version allows for inter-coder agreement analysis ■ Multi-user licenses permit sharing the same license with multiple people.

Comments on ATLAS.ti 25

Flexibility *Functionality does not rely on code and retrieve, yet if that is all the user needs it is very easy to get to that point. The flexibility provided by the quotation structure and the ability to hyperlink between places in the data without abstracting to the coding level is useful and unique in comparison to other CAQDAS-packages.*

Multi-user licenses support teams *by permitting the sharing of the same license with multiple people (based on non-concurrent use, i.e., when one user logs off, their seat instantly opens up for another user) with no restrictions on people, seats, or machines.*

Support for PDF documents *provides an accurate representation of the pdf and its layout, images etc. This is most useful if the exact layout of the PDF is important for the researcher in respect of the analysis. In addition, that coloured highlighting and annotations made on Word and pdf files before adding them to an ATLAS.ti project are preserved, is very useful.*

Excellent Co-occurrence Analysis *The Code-Documents Table and the Code-Cooccurrences feature provide easy ways, without building a query, to find co-occurrences of codes/documents and offers straightforward options for varying co-occurrences.*

The Query Tool: *some search operators have very precise parameters, and the user must be aware of these to interpret results and their implications reliably. Smart codes are powerful and unique and provide efficient ways to remind, pose questions or build hypotheses. The presence of smart codes in the codes list is a constant reminder of previously posed queries which facilitates continuity and rigour.*

The network tool is very flexible *in that any object can be linked to almost anything else. The software remembers previously created links, so the user needs to be sure the connection remains relevant or use proxy codes to illustrate an abstract model. The ability to see the content of quotations in networks is useful for analytic and display purposes and is unique in its functionality. Almost all operations (e.g. coding, renaming, deleting, linking, commenting) are possible from withing the network view.*

New AI technologies are embedded *to support researchers by suggesting codes based on user-defined research questions and objectives, applying descriptive codes, summarizing data segments and conversing with text documents. These are optional to use, so those not wanting to use artificial intelligence for qualitative analysis can work with ATLAS.ti's other tools.*

Further Reading

- Friese, S (2019) Qualitative Data Analysis with ATLAS.ti, Sage Publications
- Friese, S, Jacks Soratto & Pires, Denise (2018). Carrying out a computer-aided thematic content analysis with ATLAS.ti. MMG Working Paper 18-02.
- Gupta A (2024) Qualitative Methods and Data Analysis Using ATLAS.ti A Comprehensive Researchers' Manual. Springer
- Silver C (2024) Navigating the Intersection of qualitative analysis and technology: strategies and tactics in the age of AI (published on the ATLAS.ti Research Hub)
- Silver C & Lewins A (2014) Using Software in Qualitative Research: A Step-by-Step Guide. Sage Publications
- Woolf, N & Silver, C (2018) Qualitative Analysis with ATLAS.ti: The Five-Level QDA® Method. Routledge
- di Gregorio, S & Davidson J (2008) Qualitative Research for Software Users, McGraw Hill, Open University Press, UK