

MAXQDA 2022 for Windows & Mac: Distinguishing features and functions

This document is intended to be read in conjunction with the ‘Choosing a CAQDAS Package Working Paper’ which provides more general commentary of common CAQDAS functionality. It does not provide an exhaustive account of all the features provided by MAXQDA 2022 but is designed to highlight some of its distinguishing elements. The Comment section at the end details our opinions on certain aspects of functionality and usability. See also Silver & Lewins (2014) *Using Software in Qualitative Research: A Step-by-Step Guide*, and Woolf & Silver (2018) *Qualitative Analysis using MAXQDA: The Five-Level-QDA method* and the MAXQDA website. We thank Julia Gerson of VERBI GmbH for ensuring the accuracy of this review.

Background <http://www.MAXQDA.com> MAXQDA 2022 for Windows & Mac is the latest in a software stream originally developed by Udo Kuckartz ■ It enables analysis of qualitative data including text, pdf, tables, audio, video, (focus group) transcripts, tweets, YouTube data, websites, surveys, bibliographical sources and still images ■ It incorporates good support for mixed methods research and quantitative analyses ■ **MAXQDA Plus** includes MAXDictio which extends functionality to quantitative content analysis, providing dictionary-based content analysis with Key Word in Context (KWIC) ■ **MAXQDA Analytics Pro** offers a large range of statistical analyses ■ **MAXQDA Reader** is a free tool allowing MAXQDA projects to be viewed and searched ■ MAXQDA TeamCloud is an add-on module that enables teams to work together on a project file and share data in a protected cloud workspace ■ The Mac & Windows versions have identical functionality and use the same project file format ■ All parts of a MAXQDA project file plus specific reports can be exported.

Minimum System Specifications (recommended by developer) Microsoft Windows 10 or higher / Mac 10.14 (Mojave) or higher ■ 4 GB RAM, recommended: 8 GB or more ■ Processor: 1,6 GHz with 2 cores, recommended: 2 GHz or more with 4 cores or more

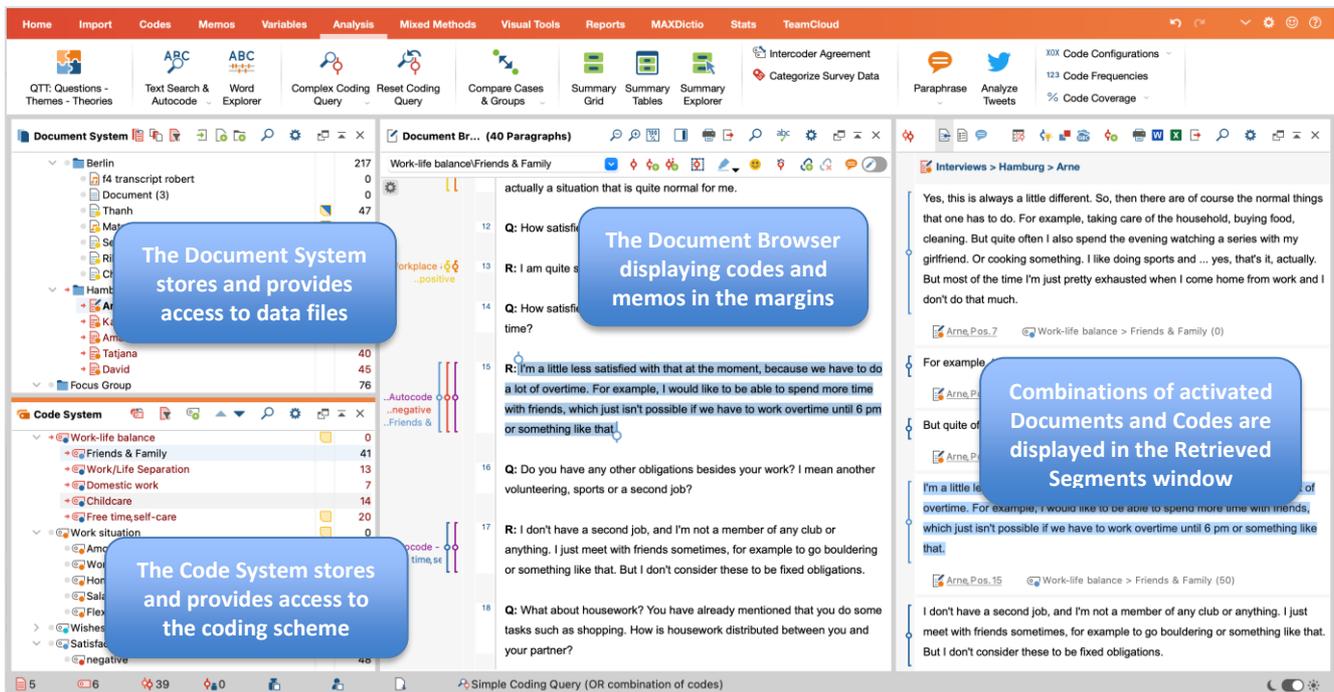


Figure 1. MAXQDA 2022 Interface showing Document System and coded document

The Structure of work in MAXQDA 2022

MAXQDA 2022 functions using an internal database system. Data files are contained within the project, and are moved or saved as part of the project ■ The user interface comprises a tab menu with a short description for each function and can be displayed in 13 languages (English, German, Chinese (simplified & traditional), French, Italian, Japanese, Polish, Portuguese (European & Brazilian), Russian, Spanish, & Turkish) ■ The interface consists of four main windows. The Document System lists data files. The Code System houses the coding schema. The Document Browser displays individual documents (multiple tab option) and the Retrieved

Segments window displays coded data ■ Windows can be resized, opened, undocked and closed as required. ■ The interface is available in light mode and dark mode ■ Spell Checking (English, German, Spanish) can be activated for text documents and memos.

Data types and format in MAXQDA 2022 Textual formats: Rich Text Format (RTF), Word files (.DOC, .DOCX, .ODT, .TXT), PDF files ■ Table formats: Excel files (.XLS, .XLSX) ■ Graphic formats: JPG, GIF, BMP, PNG, SVG and TIF ■ Audio/video formats: standard file formats like MP3, WAV, MP4, MOV and others. Audio/video can be transcribed within MAXQDA and written transcripts synchronized with corresponding media file ■ Comments and Highlights from Word and PDF documents ■ Video file subtitles (.SRT) ■ Import of interview transcripts with timestamps combined with corresponding audio and video files ■ WebVTT (Web Video Text Tracks) files (.VTT) ■ Bibliographical data in .RIS or .TXT format ■ Texts can be edited but are safeguarded from accidental changes by read-only properties ■ Import survey data from Excel spreadsheets, SPSS (.SAV), and SurveyMonkey ■ Connect to Twitter to import, filter, statistically analyse and visualise tweets ■ Text line wraps and paragraphs are automatically numbered ■ Automatic recognition and coding of different speakers in focus group transcripts as part of transcript importation ■ Websites: “Web Collector for MAXQDA” is a free browser add-on to capture web-content for import. Bulk import of websites from Excel files ■ REFI-QDA Projects (.QDPX) created with other QDA software packages

Closeness to data and interactivity in MAXQDA 2022 Windows containing different elements of work can be displayed and worked with simultaneously ■ Seamless interactivity across different aspects of work ■ Tables displaying frequency information are fully interactive and easily exported ■ Retrieval of coded data is viewed in its source context at the same time as being lifted out of context providing a good balance ■ The margin display shows codes, comments, memos and memo previews, time stamps, paraphrases, and GEOLinks (geographical references), is fully interactive and prints well. It can be filtered in various respects, including by activation, user or colour attribute.

Coding scheme in MAXQDA 2022 The coding schema can be as hierarchical or as un-hierarchical as required. A hierarchical structure can contain up to ten levels ■ Drag and drop allows easy re-organisation or merging of codes across and within hierarchies and into sets (shortcut groupings) ■ Assign colour to codes which appear in margin display and in the code system ■ Codes on view can be filtered by colour or author ■ Code definitions can directly be attached to each code in a *code memo* ■ Codes can additionally be re-organized into sets which act as short-cut groupings ■ Emoticode® feature allows quick coding with more than 3000 emoji symbols ■ Code system can be created and re-organized in a mind-map layout in the Creative Coding mode ■ The Smart Coding Tool allows the coding scheme to be reviewed and amended ■ Frequency tables and editable diagrams show statistics of sub-codes.

Coding Processes in MAXQDA 2022 Drag and drop selected segments onto a code or vice versa ■ Assign recently used codes from drop-down menu ■ Assign keyboard shortcuts to frequently used codes ■ Apply weight to coded segments within a range of 0 to 100 ■ Apply comments to coded segments ■ “Open coding” mode for quick inductive coding ■ Convert code frequencies into numeric attributes ■ Auto-coding devices based on text searches – including options to code surrounding sentence, paragraph, or set number of words if additional context required. Automatic coding of text based on requested auto-indexing of selected words after using word frequency tools in MAXDictio ■ Categorize and code answers of open-ended survey questions in an interactive display.

Basic Retrieval of coded data in MAXQDA 2022 Activation is the central retrieval principle which is easy to understand and execute. Activation ‘turns on’ combinations of codes and documents to display relevant segments in the Retrieved Segments window ■ Documents can be activated in various ways, e.g. by sets, variable values, weight, at random or by code colour ■ Speaker-sections within e.g. focus-group transcripts can also be activated independently ■ Functional hierarchies allow quick retrieval of data coded at a top level and all its sub-codes together. A subtle variation on this when querying is the *Use Subcodes* option which treats a whole hierarchy as one code for the purposes of finding e.g. co-occurrences of another code anywhere within other activated hierarchies ■ Overview tables of coded segments provide interactive listing of selected parts of coded data ■ Writing Summaries of coded segments and displaying them together with variable values in an overview table grouped by documents and codes ■ Compare coded text segments or code frequencies across different groups ■ Display of the amount data coded.

Data Organisation in MAXQDA 2022 Descriptive organization according to known characteristics is enabled by applying variables to data ■ Three types of variable: document variables, focus group participant variables and code variables, provide flexibility for organizing different units of analysis ■ Sets of documents provide shortcuts to groups of data ■ Documents can be given colour attributes for visual differentiation.

Writing Tools in MAXQDA 2022

There are six writing ‘spaces’ in MAXQDA 2022 ■ The Logbook is a central space for keeping notes about the whole research process ■ Memos can be attached to other components (e.g. groups, documents, codes, segments, sets) or be ‘free’. They are displayed with user defined styles, labels and post-it note icons, and can be grouped by type. Memos of documents/codes have a designated text area for case/topic summaries Memos can be viewed, filtered, searched and sorted in a designated workspace called “Memo Manager” or in a simple Table Overview, and selected Memos can be exported into one file ■ Paraphrases are displayed next to data in the Document Browser window or in a matrix view for user-specified groups and can be used to build up a category system with a focused paraphrase table ■ Comments are spaces for notes linked to specific coded segments and can be displayed next to data in the Document Browser ■ Summaries are spaces for summarizing multiple pieces of coded data, displayed in a matrix view of (activated) documents or user-specified groups by codes. ■ Question – Themes – Theories (QTT) is a workspace where analytical results can be stored and organized by research question. Comments can be added to elements added to worksheets and write Insights, Conclusions, Theories in designated areas. QTT worksheets can be exported as Word reports.

Searching and interrogating the dataset in MAXQDA 2022

Interrogate by simple / complex states of activation ■ Activation by weight adds an extra dimension to searching ■ Interactive Matrix Browsers allow tabular visualization of code co-occurrences and frequency of codes occurring in (groups of) documents ■ Word Explorer displays occurrence and context for a word or phrase in an interactive dashboard ■ Code Configuration displays co-occurrences of codes in up to six dimensions ■ Matrices are interactively connected to source data ■ Code frequency table shows frequency of codes across whole data set or amongst activated documents and codes ■ Usual range of Boolean and proximity operators for retrieving coded text ■ Auto-code text search hits with existing or new codes. ■ Analyze Sentiment of text data or Tweets, and auto-code them with sentiment scores

Linking devices in MAXQDA 2022

Pairs of data segments within text documents, images, media files, and memos can be linked ■ External links to websites and local files are possible ■ Link memos to one another in map (visual link only) ■ Link memos to codes (functional link) and coded segments to enable retrieval of writing accordingly ■ GEOLinks provide direct link from data segments or codes to Google Earth locations ■ Hierarchical links between codes in Creative Coding Maps that can be transformed into the coding schema.

Visual tools in MAXQDA 2022

Document Portrait provides a visual overview of how an individual document has been coded ■ The Code Matrix Browser displays code frequencies across cases or groups as symbols, numbers, or a heatmap ■ The Code Relations Browser displays overlapping, proximity or co-occurrence within a document as symbols, numbers, or a heatmap ■ Document Comparison Chart compares coding across paragraphs within activated documents ■ The Codeline provides an interactive visual map by paragraph showing how an individual document has been coded. A single click in any colour block within all three tools provides in-context retrieval ■ Tag clouds display frequently used words for document(s) or codes in a cloud illustration ■ Document / Code Map display the results of similarity analysis as clusters of Cases or Codes in a map-like display ■ Profile Comparison Chart displays patterns in code assignments and variable values across cases or groups ■ Charts show sub-code and document variable statistics ■ MAXMaps is a mapping tool which enables the graphic visualization of all aspects of the project and to embed items not existent in the project – such as photographs etc. Full (interactive) integration between objects in a map and the rest of the project. ■ MAXMaps can also be used as a free mind mapping tool completely independently from any project data ■ MAXMaps offers 15 automatic templates for focused visualizations, e.g. Case Models or Code Theory Models.

Output in MAXQDA 2022

Retrieved segments can be exported to a WORD document, EXCEL or HTML (including memos and variables) ■ Smart Publisher tool creates a ready-to-print report for all segments of selected codes ■ Output combinations of memos into one file (all memos, all memos currently displayed in the Memo Manager, all memos linked to one data file or a set of files, or all memos linked to one code) ■ Any interactive table can be exported to view in a spreadsheet application ■ All visual displays can be saved as an image (PNG or SVG) ■ Code system can be exported as code book with definitions (if are attached as code memos) ■ Print documents including margin view.

Content analysis features in MAXQDA 2022

MAXDictio (add on module with MAXQDA Plus) allows word frequency across (groups of) texts providing a tabular index with interactive Key Word In Context (KWIC) retrieval ■ Dictionaries can be built to create lists of active words that can govern the functioning of other tools. Indexing options auto-code selected words and surrounding context ■ Interactive Word Tree displays words including most frequent

words leading to or from the word (combination) in focus ■ Language option can be switched to Japanese language to facilitate quantitative text analysis for Japanese text ■ Stop lists can be built to exclude a list of words in features that analyze word frequencies ■ Frequency analysis for combinations of up to 5 words ■ Word frequency analysis can be lemmatized in 14 languages.



Figure 2. Some of MAXQDA's range of Visual Tools

Mixed methods features in MAXQDA 2022 MAXQDA 2022 provides a selection of tools specifically designed to facilitate mixed methods projects ■ Activation by variable allows data files to be activated based on the presence of variables (e.g. socio-demographic characteristics) ■ The Interactive Quote Matrix generates a display of grouped coded segments based on respondents' characteristics ■ Crosstabs allows coded comparisons to be made according to groups of data ■ Quantitizing creates a variable based on the frequency of a code in a document ■ Typology Tables allow the visualization of variable values based on qualitative typologies previously created ■ Similarity Analysis analyzes which documents are the most similar based on codes, code frequency and variable values ■ Joint Displays display qualitative and quantitative data and results in side-by-side displays. ■ Diagrams can be edited to modify descriptions or color schemes

Statistical features in MAXQDA 2022 Stats (add on module with MAXQDA Analytics Pro) offers frequently used descriptive and inferential statistical methods ■ Statistical analysis of MAXQDA project data (codes / variables) or external file (.sav SPSS database): frequency tables, descriptive statistics, crosstabs, one-way analysis of variance, correlation and scales ■ Interactive result tables, in which rows and columns can be moved, deleted or merged while the results are automatically recalculated.

Reporting and export in MAXQDA 2022 The Smart Publisher is a report generator to create a formatted Word document with selected coded data, including title page, and tables of contents from editable template that can be set up to a company's corporate design ■ A codebook can be created and exported, which lists selected codes and their associated code definition ■ Document Profile Table creates a table of selected documents and optionally their document memos, code frequencies, and variable values ■ Adjacency matrix exports code relationships for further analysis with specialized network analysis tools ■ QTT exports reports of analytical results (visual, summaries, memos, etc) together with the users insights and comments to these elements as a Word document ■ Table overviews of coded segments, memos, codes, links and summaries (incl. coded segments) can be displayed and exported. ■ Save all project components to one EXCEL file ■ Archiving features pulls all sources and optionally statistical data, media data, meta data and code system into a folder or zip file

Teamworking in MAXQDA 2022

Merge parts of projects e.g. coding for individual documents, or a document group, or a whole project's database can be imported into another ■ Code margin displays can be filtered to hide or reveal other researcher's work ■ Intercoder agreement can be calculated to compare coding of the same document done by two researchers ■ MAXQDA Reader enables those without a license to view project data ■ Finely tune access to, and rights over specific functions (coding, editing, etc.) in User Management settings ■ MAXQDA TeamCloud: Users can work together on the same project by sharing the data in a cloud space. MAXQDA notifies team members about new team project downloads or uploads in the TeamCloud ribbon. Team members can work offline between up- or downloads. Project history is stored in merge protocols. Team members can communicate in a shared team logbook.

Comment on MAXQDA 2022

- **The total equivalence of the Mac and Pc versions of MAXQDA 2022 is welcomed.** This significantly helps collaborative projects that need to share work and makes the teaching of mixed platform users unproblematic.
- **The MAXQDA 2022 user interface is compact, appealing and tidy.** Tables, visual tools and memos provide superb interactive contact with different aspects of work keeping the user close to source data at all times. Auto arranging but resizable windows allow easy customization and isolation of element(s) of work. The user interface could be rather cramped with larger datasets and therefore it is recommended to work with large or multiple monitors if possible.
- **MAXQDA 2022 is intuitive, simple and efficient.** It is easy to learn and to begin working with effectively. It includes some simple yet appealing features which users often request, including the ability to choose from an extensive colour palate for codes and print off the margin display easily and satisfactorily.
- **MAXQDA 2022 makes good use of colour** to visually differentiate various aspects of work. Colour is a powerful means of organisation and MAXQDA provides several unique uses of colour. These are seemingly simple devices, but are valued highly by users and when used systematically can be powerful retrieval and filtering devices.
- **MAXQDA 2022 has excellent writing tools**, including options not provided by other products. MAXQDA has one of the best memo retrieval systems, which is particularly useful in team situations. The varied nature of memo retrieval means it is less important to be systematic than in other software packages. However, the ability to code the content of memos would be useful.
- **Activation allows quick and uncomplicated retrieval** without recourse to the search tool. Interrogation of the dataset in this way is easy to grasp and manipulate. Automatically generated Code Relations and Code Matrix browsers, and the Code Configuration tool, provide easy ways of viewing co-occurrences which are more complicated to generate in other products.
- **Qual-quant integration supporting mixed methods projects is highly developed in MAXQDA** There are several tools specifically designed to support mixed methods analysis, some of which are unique to MAXQDA. For example, converting code frequencies into document attributes, the ability to assign weight to coded-segments and interrogate on that basis.. The Stats module (available in MAXQDA Analytics Pro) also means some quantitative analysis can be undertaken without exporting to another program. However, currently statistical analysis is restricted to descriptive and bivariate inferential statistics (not multivariate inferential statistics).
- **The focus-group import function is powerful and efficient**, resulting in the automatic coding of repeated speaker sections in focus-group transcripts, group interviews and other data where repeated structures exist within data documents. The pre-formatting that needs to occur to make this work is very limited, therefore does not place an extra burden on data preparation. However, it is cumbersome to link responses by the same participant from two different data sources (e.g. a focus-group and a survey, or an interview and observations)
- **Sets of documents and codes in MAXQDA 2022 are very useful** as is the ability to save combinations of states of activations, turning what might be complex multiple step query operations in other packages into simple and intuitive processes in MAXQDA.
- **In the team situation** users can be selective about which items they merge together thereby allowing cumulative comparison of work. The MAXQDA Reader is also a useful way to involve team members who are not using the software directly.
- **Visualisation tools are unusual and easy to operate**, with several options unique to MAXQDA 2022. The visual tools using colour blocks to chart codes in data can be particularly useful if tracking process or the flow of thought in unstructured narratives. Such tools depend on deliberately assigning colours to codes in a logical and consistent way. MAXQDA was the first CAQDAS package to incorporate the ability to link to geographical reference points in mapping tools (e.g. Google Earth™) using GEOLinks.

- **MAXMaps is a useful tool** allowing the user to create layers and graphically enhance the map in various ways. 15 different model templates provide powerful ways to visually interrogate patterns and connections in data based on earlier work.
- **MAXDictio** (available in MAXQDA Plus) has a useful range of content analysis tools not currently available in most other code based packages (apart from QDA Miner and DiscoverText). They provide interactive (KWIC) connections to the source context.

Further Reading

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