MAXQDA 12 for Windows and Mac OS X
Distinguishing features and functions

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 and functions provided by MAXQDA 12 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*, Second Edition, Sage Publications and software developer website. We thank Julia Gerson of Verbi GmbH for ensuring the accuracy of this review.

## Background   http://www.MAXQDA.com

MAXQDA 12 for Windows and Mac OS X is the latest in a software stream originally developed by Udo Kuckartz ■ It enables analysis of a variety of qualitative data including text, pdf, tables, audio, video, focus group transcripts, tweets, bibliographical data and still images and incorporates good support for mixed methods research ■ MAXQDAplus (extra cost) includes MAXDictio which extends functionality to provide basic dictionary-based content analysis with Key Word in Context (KWIC) ■ MAXReader is a free project reader tool allowing MAXQDA projects to be viewed, searched and material exported ■ Free companion app, MAXApp for iOS and Android, is for data collection and coding.

Minimum System Specifications (recommended by developer)

Windows 7 or higher / Mac OS X 10.7 or higher

The Structure of work in MAXQDA 12

MAXQDA 12 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 4 windows. The Document System lists data files. The Code System houses the coding schema. The Document Browser displays individual documents and the Retrieved Segments window displays coded data ■ Windows can be resized, opened, undocked and closed as required.
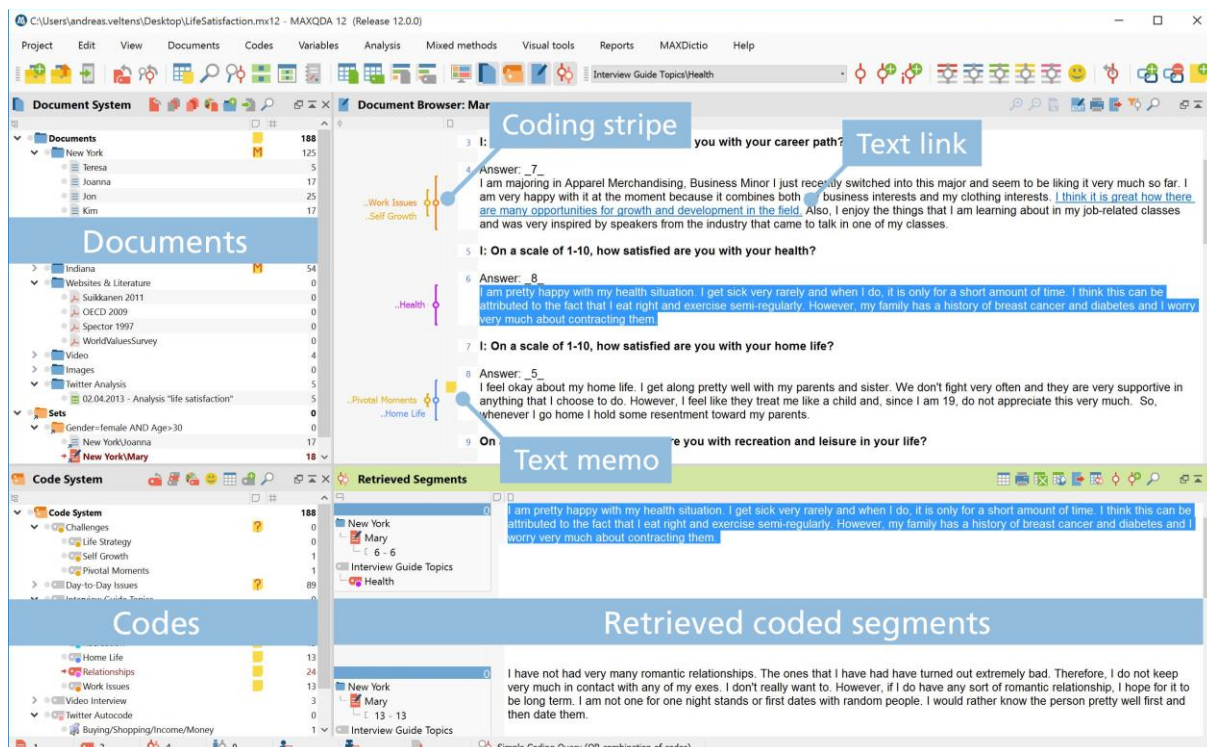
Figure 1. MAXQDA 12 Interface showing Document System and coded document

Data types and format in MAXQDA 12

Textual formats: Rich Text Format (RTF), Word files (.DOC, .DOCX, .ODT), PDF files. ■ Table formats: Excel files (.XLS, .XLSX). ■ Graphic formats: JPG, GIF, BMP, PNG and TIF. ■ Audio/video formats: standard file formats like MP3, WAV, MP4, MOV and others. Audio/video can be transcribed within MAXQDA 12 and written transcripts synchronized with corresponding media file. ■ Bibliographical data in .RIS format. ■ Texts can be edited within the software but are safeguarded from accidental changes by read-only properties. ■ Survey import from spreadsheet. ■ Can connect to Twitter to import 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.

Closeness to data and interactivity in MAXQDA 12

Windows containing different elements of work can be displayed and worked with simultaneously. ■ Full and seamless interactivity across different aspects of work (often just one click). ■ All tables displaying frequency information are fully interactive and easily exported. ■ Basic and complex 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, memos, time stamps, and GEOLinks, is fully interactive and prints well. It can be filtered in various respects, including by activation, user or colour attribute.

Coding scheme in MAXQDA 12

The coding schema can be as hierarchical or as un-hierarchical as required. ■ Drag and drop allows easy re-organisation of codes across and within hierarchies and into sets (shortcuts). ■ Assign colour to codes which appear in margin display and in the code system ■ Codes on view can be filtered by colour/s or authors. ■ Codes can additionally be re-organized into sets which act as short-cut groupings. ■ Emoticode® feature allows quick coding with more than 300 symbols and icons. ■ Code system can be created and re-organized in a mind-map layout.

Coding Processes in MAXQDA 12

Drag and drop selected segments onto a code or vice versa. ■ Assign recently used codes from drop-down menu. ■ Assign keyboard shortcuts to the most frequently used codes. ■ Undo recent coding actions from the margin view. ■ Apply weight to coded segments within a range of 0 to 100 to indicate how strong an example a segment of data is of corresponding code. ■ Applycomments to coded segments. ■ 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 (new to version 12) if additional context required. Automatic coding of text based on requested auto-indexing of selected words after using word frequency tools in MAXDictio (add-on, extra cost).

Basic Retrieval of coded data in MAXQDA 12

Activation is the central retrieval principle used by MAXQDA which is easy to understand and to execute. Combinations of codes and documents are 'turned on' displaying relevant segments in the Retrieved Segments window. ■ Documents can be activated in various ways, including by set or (combinations of) variable values, by weight, or according to colour code attribute. ■ 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, the *Use Subcodes* option means that a whole hierarchy can treated 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 provides an 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.

Data Organisation in MAXQDA 12

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

Writing Tools in MAXQDA 12

There are four writing 'spaces' in MAXQDA 12, the Logbook, Memos, Comments and Summaries. ■ The Logbook is a central space for keeping notes about the whole research process ■ Memos can be attached to whole documents,

document segments, and codes and are displayed with user defined styles, labels and post-it note icons. ■ Memos can be linked to any number of relevant codes and can be grouped into types ■ Output memos based on these criteria into one file. ■ Memos can be viewed in table overview, where they can be ordered by date, author, or any other attribute of the memo, like the document it is linked do. ■ Comments are spaces for notes linked to specific coded segments ■ Summaries are spaces for summarizing coded data, displayed in a matrix view of (activated) documents by codes.

Searching and interrogating the dataset in MAXQDA 12

Interrogate by simple or 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. Matrices are interactively connected to source data. ■ Code frequency table shows frequency of codes across whole data set or amongst activated documents and codes. ■ Text searching provides Key Word in Context (KWIC) retrieval using Lexical Searching or MAXDictio. ■ Usual range of Boolean and proximity operators for retrieving coded text. ■ Auto-code text search hits with existing or new codes.

Linking devices in MAXQDA 12

Pairs of documents or image passages 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) to enable retrieval of writing accordingly. ■ GEOLinks provide direct link from data segments or codes within MAXQDA to Google Earth positions. ■ Hierarchical links between codes in Creative Coding Maps that can be transformed into the coding schema.
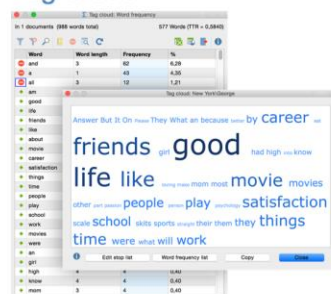
Visual tools in MAXQDA 12

Document Portrait provides a visual overview of how an individual document has been coded. ■ 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) in a cloud illustration. ■ 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.
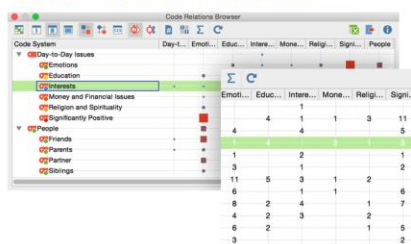

Figure 2. Some of MAXQDA's range of Visual Tools

Output in MAXQDA 12

Retrieved segments can be exported to an RTF document, EXCEL or HTML (including memos and variables if selected). ■ 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 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. ■ 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 12

MAXdictio (add on module with MAXQDAplus) 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.

Mixed methods features in MAXQDA 12

MAXQDA 12 provides a selection of tools specifically designed to facilitate mixed methods projects. ■ These include Activation by variable, the Quote Matrix, Crosstabs, Typology Table, Configuration Table, Similarity Analysis of documents, and Statistics of subcodes. ■ Activation by variable allows data files to be activated based on the presence (combinations of) variables (e.g. respondents' socio-demographic characteristics). ■ The Quote Matrix generates a tabular output showing coded segments based on respondents characteristics. ■ Crosstabs allows coded comparisons to be made according to groups of data or respondents. ■ Typology Tables allow the visualization of variable values based on qualitative typologies previously created. ■ Configuration Tables show coding patterns for a set of codes. ■ Similarity analysis analyzes which documents are the most similar based on codes, code frequency and variable values. ■ Statistics of subcodes creates frequency tables and editable diagrams for subcodes.

Teamworking in MAXQDA 12

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 is a free product enabling those without a license to view project data. Useful in diverse team situations where many researchers are involved without the need for everyone to be versed in the use of software.

Comment on MAXQDA 12

The total equivalence of the Mac and Pc versions of MAXQDA 12 is welcomed. This will significantly help collaborative projects that need to share work and makes the teaching of mixed platform users unproblematic.

The MAXQDA 12 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 12 is intuitive, simple and efficient. It is easy to learn and to begin working effectively without the need for extensive training. 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 12 makes good use of colour to visually differentiate various aspects of your work. Colour is a very powerful means of organisation and MAXQDA 12 provides several unique uses of colour. These are seemingly simple devices, but valued highly by users and when used systematically can be powerful retrieval and filtering devices.

MAXQDA 12 has excellent memo tools, including options not provided by other software. Easy, visual systematic memo retrieval options are particularly useful for team situations. MAXQDA 12 has one of the best memo retrieval systems. 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 as well as to link codes to whole 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 provide easy clicking to get co-occurrences which are more complicated to generate in other leading software.

Qual-quant integration supporting mixed methods projects is highly developed in MAXQDA since it is one of few packages from which qualitative data in tables (e.g. the text of the open ended questions in Excel) can be imported more or less directly from spreadsheet applications. The automatic conversion of code frequencies into attributes (applied to documents) for chosen coding, potentially enables further manipulation when exported for quantitative analysis. Another useful tool is the ability to easily assign weight to coded segments though like qualitative coding the way the user might make these judgments will be subjective. Qual-quant integration is also reinforced by the ability to easily activate responses or documents on the basis of combinations of attribute values and convert instantly to Sets.

The new 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.

Sets of documents and codes in MAXQDA 12 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 MAXReader 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 12. The three visual tools using colour blocks to chart codes in data might have particular utility for research which is tracking process or the flow of thought in unstructured narratives. Such tools depend on the researcher deliberately assigning colours to codes in a logical way with a view to using these visualisation tools subsequently. MAXQDA was the first CAQDAS package to incorporate the ability to link to geographical reference points in mapping tools (e.g. Google Earth^{TM}) using GEOlinks.

MAXmaps is a useful tool allowing the user to create layers and graphically enhance the map in various ways. The recent addition of automatic map creation based on various templates is useful for facilitating interrogation. On the whole however the use of the map is a little stilted since there are three modes in which you can operate and you keep finding yourself in the wrong mode.

With the addition of MAXDictio the software has a small but useful range of content analysis tools not currently available in most other code based packages (apart from QDA Miner). They provide interactive (KWIC) connections to the source context.

Further Reading

- Silver C & Lewins A (2010) 'Computer Assisted Qualitative Data Analysis' in Penelope Peterson, Eva Baker, Barry McGaw (Editors), **International Encyclopedia of Education**, Vol 6, pp 326-334. Oxford: Elsevier
- Silver C & Lewins A (2014) **Using Software in Qualitative Research: A Step-by-Step Guide**, Sage Publications (uses a MAXQDA project as worked example)
- Lewins, A. (2008) 'CAQDAS: Computer Assisted Qualitative Data Analysis' in (ed) N. Gilbert, **Researching Social Life** (3rd ed), Sage, London
- Silver, C., & Fielding, N. (2008) 'Using Computer Packages in Qualitative Research', in Willig C & Stainton-Rogers W (eds.) **The Sage Handbook of Qualitative Research in Psychology**, London, Sage Publication (uses a MAXQDA project as worked example)
- Corbin J & Strauss A (2007) **Basics of Qualitative Research**: **Techniques and Procedures for Developing Grounded Theory - 3rd Edition,** Sage Publications, London (uses a MAXQDA project as worked example)
- Gibbs, G. (2007) **Analysing Qualitative Data**, part of the Qualitative Research Kit, ed. U. Flick, Sage, London
- di Gregorio, S & Davidson J (2008) **Qualitative Research for Software Users**, McGraw Hill, Open University Press, UK (uses a MAXQDA project as worked example)
- Kuckartz, U. (2014) **Qualitative Text Analysis: A Guide to Methods, Practice and Using Software**, Sage, London