QSR NVivo8
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 NVivo 8 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 Lewins & Silver (2007) *Using Software in Qualitative Research: A Step-by-Step Guide*, Sage Publications and software developer website.

Background http://www.qsrinternational.com/ Tom Richards and Lyn Richards originally developed NUD*IST at La Trobe University, Melbourne, to support Lyn Richards in her work as a family sociologist. Subsequently QSR International was formed which now develops and supports all QSR software products. Here we review the latest version of NVivo8 (up to and including Service Pack 4).

Minimum System Specifications (recommended by developer)

2GHz Pentium 4 Pentium processor or faster ■ 512MB RAM or more ■ 1024 x 768 screen resolution or higher ■ Windows XP Service Pack 2 or later ■ Approximately 1GB of available hard disk space ■ Internet connection ■ NVivo8 requires the MS SQL Server component in order to run (comes with software).

Structure of work in NVivo8

The database system can be 'internal' or 'external', usually depending on how large any multi-media files are. If internal then one project file holds all information including data files. If external then data files remain outside of the NVivo project file ■ The NVivo8 interface is modeled on MS Outlook™ which provides familiarity for some users ■ The 'Workspace' provides access to the different elements of the project and the interface can be customized in certain respects (e.g. where different panes or menus appear etc.). ■ The main views in the workspace are the Navigation View (providing access to project folders e.g. sources, nodes, models, links etc); the List View (listing items within each folder); and the Detail View (where the content of an item is displayed).

Figure 1. NVivo8 Interface showing Casebook and Matrix Query

Data types and format in NVivo8

Textual Formats : *Text only*, *Rich text format* (.rtf), *MS Word™ or PDF (.pdf).* ■ Multimedia formats : *Digital video, audio and graphic* files can be directly imported or assigned to the project and treated in similar ways as textual formats ■ video formats : mpg, mpeg, mpe, wmv, mov, avi, qt, mp4 ■ audio formats : mp3, wma, wav ■ graphic formats : bmp, jpg, jpeg, tif, tiff, gif. ■ See developer information for up to-date list. ■ Documents can be given Read only properties. ■ 3 types of sources: *Documents* : the source materials (e.g. transcripts, videos etc.). *Memos* : to record thoughts. *Externals* : proxy files to represent or link to files outside NVivo8.

Closeness to data and interactivity in NVivo8

Sources are viewed in the Detail View ■ Opened sources are tabbed providing access without having to use the Navigation buttons ■ Text does not line wrap ■ Viewing coded data initially lifts segments out of source context ■ Hyperlinks provide in context highlighting in source file ■ Linking devices (see below) increase integration between project items ■ Undock windows to view opened Detail Views in separate windows.

Coding scheme in NVivo8

The coding schema can be as hierarchical or un-hierarchical as required ■ There are 5 types of node (code) : Free Nodes & Tree Nodes which respectively list thematic or conceptual codes in a simple one level list or in a visual hierarchy; Cases (for coding respondents' speech in order to organize according to known characteristics); Relationships (for coding connections or relationships between nodes); and Matrices (to save results of qualitative cross-tabulations – see below) ■ Nodes are visible in separate folders in the Nodes Folder View ■ The contents of each folder is viewed in the corresponding List View. ■ An All Nodes folder allows access to all current nodes, regardless of the type ■ Sets of Nodes enable the grouping of nodes (and/or sources) from multiple folders in different ways.

Coding processes in NVivo8

Free and *Tree nodes* can be created up-front and can remain independent of text or be created as emergent codes when considering data. ■ Drag and Drop **s**elected text onto existing nodes. ■ Short cut coding icons speed up coding process.

Basic retrieval of coded data in NVivo8

Basic retrieval of data coded at a code by opening the node and viewing in the Detail View. ■ Detail Views are live allowing recoding whilst in this view. ■ Detail views have side tabs offering data selections based on different media. Coding Stripes allow specified nodes to be viewed in a right hand margin. Choose according to, for example, codes most coding item, codes least coding item, codes recently coding item, or manually choose codes. ■ Coding density stripe indicates occurrence of all codes at points throughout the source. ■ The coding stripes view is interactive : selecting a code highlights the relevant text, coded data can be accessed and segments un-coded.

Data organisation in NVivo8

The organisation of data happens by creating cases and applying attributes. ■ A case can comprise (parts of) one or several sources ■ Attributes can only be applied to cases ■ Case and attribute information can be imported from or exported to a spreadsheet application. ■ Autocode sources according to structure (headings or paragraphs). ■ Sets are shortcuts to project items. They allow any combination of items to be grouped (e.g. individual documents, nodes, memos etc. can belong to the same set)

Writing tools in NVivo8

A number writing tools allow writing in many different places. ■ Memo's: blank documents can be created as memos at any time, or linked to an existing document or node. These are full ranking documents and therefore can also be coded. ■ Annotations: comments linked to any point in any document act like endnotes and are centrally listed with hyperlinks back to points in source files.

Searching and interrogating the dataset in NVivo8

Six types of Query : Text Search (for content in sources, nodes, sets or annotations). ■ Word Frequency Query (for counting words across all sources, or subsets, providing limited Key Word In Context (KWIC) retrieval) ■ Coding Query (simple queries to find e.g. where cases with a particular attribute are coded at a particular node, or advanced queries allow searching for position of nodes in the data (e.g. Boolean or Proximity operators). ■ Matrix Coding (compares pairs of project items and displays in a table). ■ Compound Query (search for specified text in or near coded data). ■ Coding Comparison Query (to compare how different team members have coded sources, using Kappa coefficient to measure percentage agreement. ■ Results of queries can be previewed, saved and outputted as snapshots of when the query was made. ■ Queries can be saved and re-run.

Linking devices in NVivo8

4 types of linking device ■ Memo Links : A memo can be linked either a node, document or an external (but not to several) ■ See Also Links : text segments linked to other project items (including passages of text in other documents) ■ Annotations : Write comments about text segments ■ Hyperlinks : link text segments to files or websites held outside NVivo8. ■ Relationships are a type of node which defines a connection between two project items. Different relationship types can be created, and the data which supports that relationship coded accordingly.

Modelling in NVivo8

Models can be either static or dynamic ■ Items in Static models are not connected to any other project item outside that model ■ Dynamic models provide live connection between project existing within the model, and the project items they represent. ■ Relationships (see above) can be visualised in a model ■ Items can be grouped in a model (acting as layers).

Charting in NVivo8

Many different types of chart (e.g. bar, column, pie, bubble etc.) can be created to visualise different aspects of the project in a more quantitative way ■ Charts can be presented in 2d or 3d and are interactively linked to qualitative data which they summarize . ■ Examples of charts include the display of coding for one source, node or type of respondent, or to visualise the result of a matrix query

Figure 2. NVivo8 Model and Chart Views
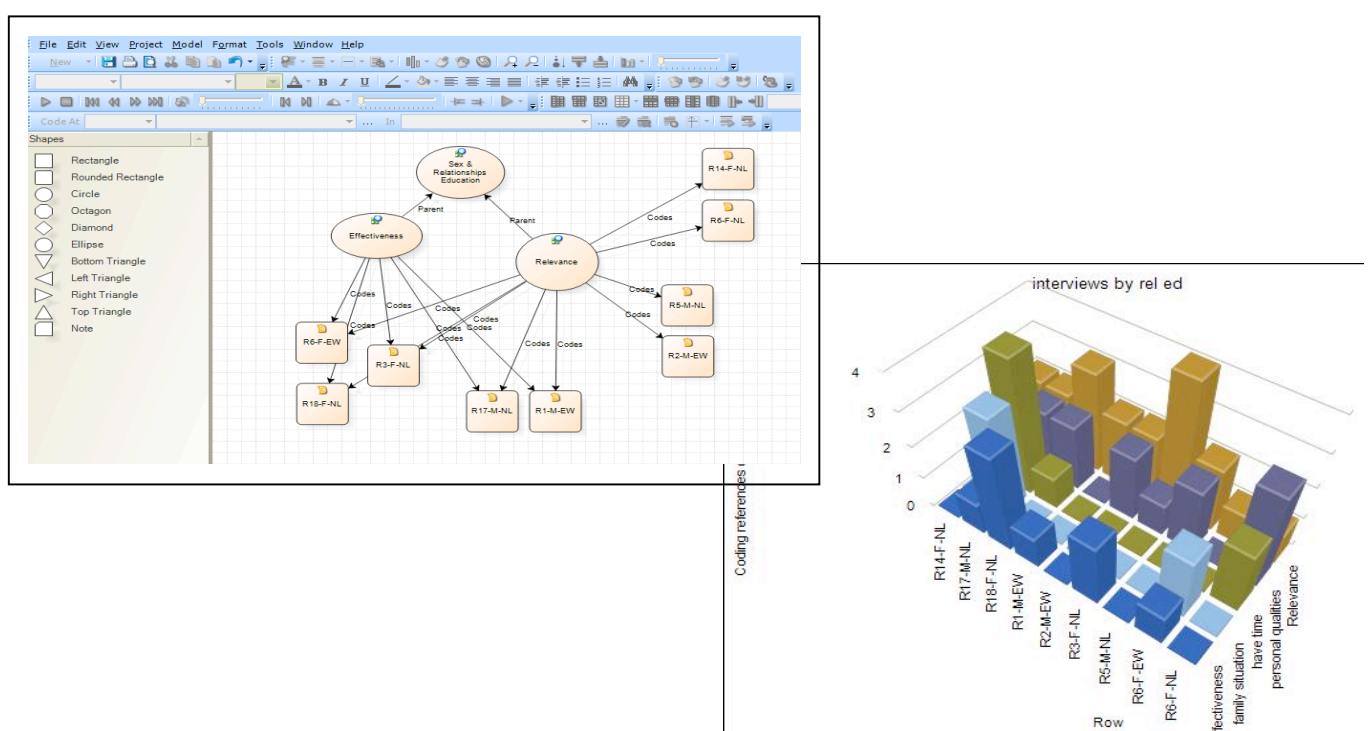
Output in NVivo8

Several forms of output in NVivo8 ■ Export Project Items : sources, nodes, matrices and the casebook ■ It is not possible to export multiple items into the same file ordered by code ■ Output of multimedia content e.g. coded segments of video data is sent straight to html format. ■ Standard reports create summaries or lengthy reports including content on individual aspects of the (Source summary, Node summary, Relationship summary, Attribute summary and Coding summary)

Team-working in NVivo8

One or more projects can be imported into the 'master' project. ■ All items or selected items with or without associated content (i.e. sources) can be imported. ■ Coding comparison query provides statistical measure of agreement amongst coders (see above)

Comment on NVivo8:

QSR's goal of normalisation is achieved to some extent with the use of the MS Outlook^{TM} interface. As long as you are familiar with Outlook you will find it easy to find your way around the software. However, the interface is somewhat restrictive as you can only view one type of function at a time. i.e. either sources, or codes, or sets, or queries etc. Compared to other software packages reviewed by the CAQDAS Networking Project, this results in a less flexible environment and impacts on the sense of contact you have across different aspects of your work. The movement between different aspects of work is not as fluid as in other software.

The Codes stripes margin display is interactive and you can manipulate what you wish to see, although less easy to read than in most other software. The coding density stripe is unique to NVivo8 and useful, particularly in the absence of being able to otherwise easily see how a document or node is coded in its entirety. It is only possible to print out data with coding stripes alongside by using a partially effective workaround in print options.

Sets are flexible in NVivo8. The ability to add different project items to the same set is unique amongst software reviewed here. This provides useful ways to isolate parts of a project, or to group aspects of work together for many different analytic or practical reasons.

The query tool is extremely flexible and the range of outcomes from queries is good. Matrix searches in particular offer flexible ways of conducting multiple searches at one time and accessing results. The ability to save the way queries are built and the way they are listed provides a useful history of repeatable interrogations. The dialogue boxes for creating queries are not very user friendly and need to be used to ask quite simple questions that are dealt with in simpler ways in other software.

Linking tools are not as versatile as in most other packages. While it is possible to hyperlink between points in the text, because of the way linkages are presented in the data for practical reasons it is difficult to use this tool heavily as it doesn't allow you track linkages easily. The inability to link a memo to more than one other source or node is particularly restrictive. Relationship nodes (nodes conceptually linked together) provide a different way of coding and linking which may suit certain types of analysis, for example, when hypothesis testing, for visually representing identified patterns or as an additional layer of coding.

Visualisation tools provide useful ways to summarize different aspects of work. The Model tool allows the user to create connections which need not affect any other aspect of work, or a model can be used to visualise connections which exist between project items based on coding and organisation. The Chart tool is easy to use and versatile, offering a range of useful ways to visualise how data has been coded. A variety of charts can be generated and they are interactively connected to data. Given the usual non-quantitative basis of sampling qualitative data, charts reduce qualitative data to what may be rather questionable quantitative

levels. On the positive side these tools can be seen as ways to step back and view (indications only) of trends across the data.

Handling non-textual data directly *is new to NVivo8 and a welcome addition although the handling of audio-visual data, in terms of transcription, coding and play-back are not yet as fully developed and fluid as in software specifically developed to handle multimedia data. When compared to other similar software packages designed initially to handle textual data, the multimedia dimensions in Nvivo8 currently provide a rather better range of tools.*

Output options *are varied and content can be specified in a variety of ways, but they are not very simple to achieve or easy to manipulate in a word processor.*

Further Reading

- Lewins & Silver (2007) *Using Software in Qualitative Research: A Step-by-Step Guide*, Sage Publications (uses an NVivo 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
- Bazeley, P. (2007) **Qualitative data analysis with NVivo**, Sage, London (uses an NVivo 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 an NVivo project as worked example)