Benefits and Drawbacks of NVivo QSR Application

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Abstract—**NVivo is the QSR International product that can be used for data analysis. NVivo multimedia based application has been widely used by researchers and scholars in western academic contexts. However, very little information is on the application of NVivo within Indonesian contexts. This paper aims to address the gap and contributes to a growing body of literature that explores the use of multimedia application tool for data analysis. The data for this analysis were taken from 10 participants as NVivo users. The findings of this study have implications for the success of similar applications and the ways to use NVivo for researchers, scholars and educators.**

Keywords—NVivo; language; bilingual education; policies; Indonesia

I. INTRODUCTION

NVivo is a software analysis that was initially introduced 30 years ago by QSR International based in Australia. Since then, NVivo has been widely used by a number of prominent researchers in qualitative fields [1]–[4]. NVivo has a number of benefits including efficient in time, transparent and multiplicity [5], able to capture mixed data both quantitative and qualitative data [1], and accommodate a rich and large amount of the data [1]–[4]. This indicates the importance of NVivo analysis tool for researchers and educators.

Research employing NVivo as data analysis tool has been conducted in different topics: constructivist learning environments [6], women and medicine in Malaysia [7], nursing students' experiences [8], health care staff professional experiences [9], [10], professionalism in psychiatry [11], and organizational decision making [12]. Despite various focus of studies above, none of studies employing NVivo as analysis tool in language, bilingualism and bilingualism area. This study using NVivo in field of language policy remains unexplored. Thus study aims to address the gap of the knowledge which provides new insights into the role of NVivo in that field.

NVivo can accommodate a number of different types of data: word documents, images, PDFs, video, spreadsheets, web pages, and social media data. In addition, NVivo works with data from any language, can organize information using theme and case, and can import articles from different reference management such as EndNote, Zotero, and Refworks. It also can visualise project data, share with other project team and can keep the tracks of memos and annotations [13]. These studies show that NVivo, unlike other qualitative analysis tool, can enhance academic works of the researchers and can be synchronized with other reference managers.

The key features of NVivo are in Table 1: source, node, case, coding, classification, attributes, and annotations. Sources have two names internal sources (when people import data to NVivo) and external sources which represent data outside NVivo. Node relates to a virtual container that lets researcher collect content across sources to group related material together. Case is related to a virtual space that represents research subjects, while coding is the action of assigning source content to a node or case. Classification is associated with a method to add descriptive information to sources and case such as references, journals and location.

TABLE I. KEY FEATURES AND ASSOCIATED NAMES

NVivo key terms	Associated names
Sources	Data, Material, Documents Survey, Transcript, Project items
Node	Code, Theme, Category Topic, Concept
Case	Units of observation Units of analysis Objects of study
Coding	Quotations, Analysis & Tagging
Classifications	Types, Sorts, Classes
Attributes	Variables, Characteristics, Rating, Descriptors, Demographics, Bibliographies
Annotations	Comments, Reminders, Observations, Footnote

Attributes relates to personal case such as sex (male or female) or age (30s, 40s, and 50s). Finally, annotation is connected to a specific comment from researcher linked to specific content in a source [14]. Mastering the functions and associated names of these features enable a researcher to operate NVivo effectively.

This paper focuses on the exploration of NVivo tools that can be used by scholars and researchers to identify, classify, and mapping the relationship of each theme of key words from documents or interviews transcripts. For the purpose of this study, questionnaire and semi-structure interviews were used. This research will contribute to the literature on qualitative method and analysis [15]. Practically, this research will help

researcher on coding any kinds of data employing NVivo for their research and academic writing publications.

II. Method

The data in this research were gathered through open-ended questionnaires. The questionnaire were handed to specifically 10 users of NVivo and followed by semi-structure interviews questions.

The process of data analysis via NVivo (Figure 1) employs a cycle procedure which begins with importing data such as interview transcripts, video, pdf or picture. Then, the data are explored to identify the key words from participants or documents. Then the key words are coded through the feature of node. Following this, the key words are searched through query. The query will display all key words of the data. The key words can be displayed in the forms of visualisation: graphs of charts. During these processes, a researcher can take note any additional comment or important idea appears through memo.
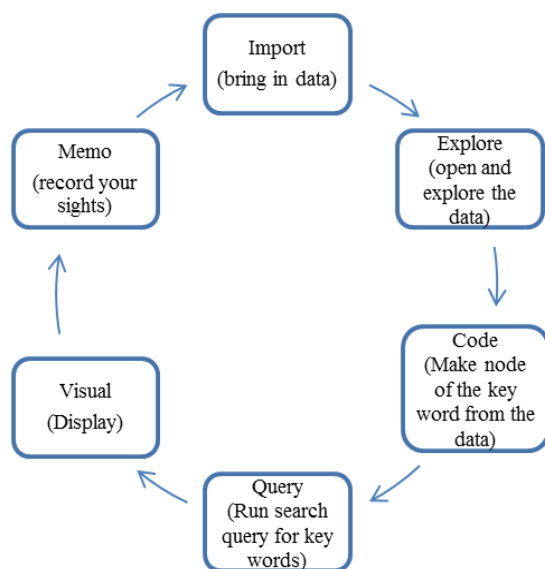

Fig. 1. A step by step process of NVivo qualitative analysis

For the purpose of this study, the analysis of the result will cover two important points: a) The advantages of Nvivo, b) The disadvantages of NVivo.

III. Result and Discussion

There were four advantages of using Nvivo for data analysis as revealed by participants in this study.

Figure 2 obviously signaled that four important advantages of NVIVO. The participants in this study argued that the most important advantages of NVivo was to assist researchers in managing a large number of data, assist the researchers to identify theme, efficient and manage to create relationship among generated themes.
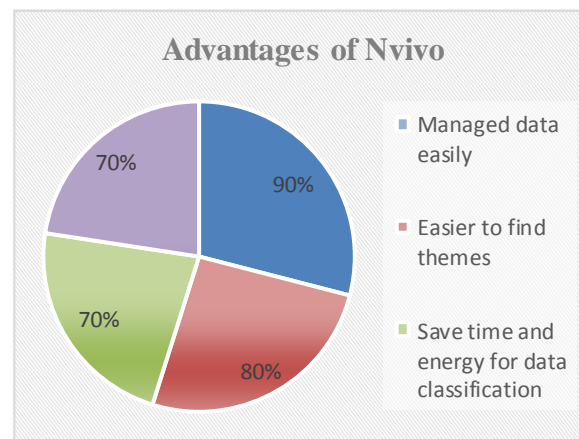

Fig. 2. Advantages of Nvivo

On the other hand, some of this NVivo users also identified some disadvantages of applying this technology for scientific data analysis. Participants in this study commented that there were several drawbacks of NVivo: Time consuming in learning to use application, expensive for individual use and can't interpret data.
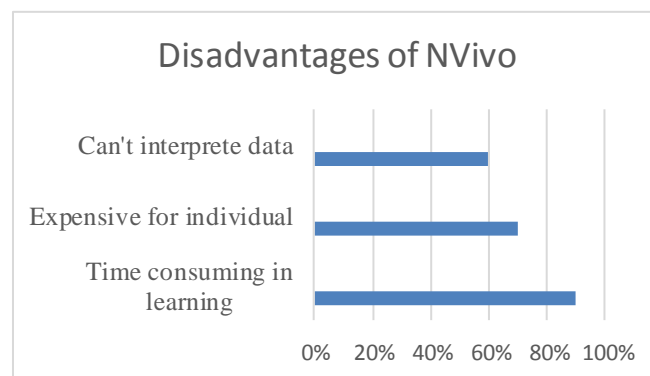

Fig. 3. Disadvantages of NVivo

Figure 3 indicated three drawbacks of NVivo application software. Most participants have similar perspectives that NVivo requires a lot of time to understand and to learn. This is why such type of data analysis only widely recognized among qualitative researchers, despite it has quantitative figures. Due to time consuming, many researchers tend to use manual data analysis. In addition, for scholars and researchers least developing and under-developing countries, it is not affordable. Even though NVivo has free version for one month trial, it may not be sufficient for researchers. Finally, few participants acknowledge that using technology does not help much in terms data interpretation.

It is obvious from the result that NVivo provides thematic classification of data based on key words. This result further extend debates on thematic analysis of data: assisting researcher to identify common key words in documents or in data, classifying key words into each category, clustering words to see the relationships among the most frequent lexis

in documents and mapping key themes that are used for academic writing.

IV. CONCLUSION

This research shows the features of NVivo as multimedia web-based application for data analysis that is applicable for any researchers. The result reveals that Nvivo has enabled researchers in this paper in mapping the pattern of key words and ideas, classifying of key words and ideas, grouping key words, themes and sub themes, and organizing thematic representation of the data. This result of analysis further extends the knowledge of thematic data analysis as suggested by earlier scholars [16], [17]. Despite the NVivo application can be used for any languages, it limits the Indonesian researchers in particular because the operation of NVivo multimedia based application can only be operated effectively if a researcher has sufficient level of English language competency.

Further studies on the application of NVivo are recommended especially the application of NVivo for mixed method analysis and how NVivo combines qualitative and quantitative data.

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