Application of software in qualitative research

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How to cite this article:
Neri de Souza D, Neri de Souza F. Application of software in qualitative research [editorial]. Rev Gaúcha Enferm. 2016 Sep;37(3): e67901. doi: http://dx.doi.org/10.1590/1983-1447.2016.03.67901.

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The historical process of studies of a qualitative nature shows that the preconceptions and challenges have been immense. It is still a constant struggle to obtain scientific recognition in many areas of study[1-2]; however, in the consolidation of studies of a qualitative nature, tools and strategies have been found to address the challenges and dilemmas related to greater recognition, accuracy and systematization.

One of the primary challenges reported was the resistance of positivists to qualitative research, by creating a distinction between hard sciences and soft sciences[3]. In other words, they consider that researchers engaging in qualitative studies are merely journalists, reporters and explorers, and that such studies lack scientific perspective due having emerged from anthropological and ethnological studies.

The situation of the 1960s was conducive to qualitative research, since social and educational problems exposed the reality of the disadvantaged and socially excluded. Qualitative methods found a unique space due to their democratic nature[4]. As Chizzotti[5:57] says, "the twentieth century, for research in human and social sciences, was one of major theoretical discoveries, expansion of research activities and dissemination of knowledge". As of that decade, scholars noted a favorable climate for the methodological development of qualitative research. Therefore, despite constant struggles, qualitative research has garnered followers and advocates in many different areas of knowledge.

Despite the important fight for the due recognition of qualitative research in the scientific realm, there is another dimension that has caused some concern among researchers in this area, since they are prone to resist technologies.

Regardless of this resistance, the growing integration of information and communication technology (ICT) in the methods and techniques of qualitative studies is well-known. ICT has contributed to their strength and recognition, since it enables studies of a mixed nature, helping to close the gap between the main differentiators of studies of a qualitative and qualitative nature. Nevertheless, there is still resistance on the part of some scholars regarding the integration of technological tools for data analysis. There are numerous arguments alleging that the use of technology skews the understanding of the phenomena or slants the analysis, in addition to replacing researchers[6]. This view is outdated and indicates lack of familiarity with the most modern tools that support data analysis in qualitative research.

However, these and other considerations and controversies have revealed certain concerns and led to studies on the use of technological tools in qualitative data analysis.

Authors[7] note that there are currently over 40 types of qualitative data analysis software. Thus, the question that must be asked is: What is the real need to use *data analysis software for the purpose of quality and understanding of results?* It should be borne in mind that this type of question may legitimize or not the use of technology in qualitative data analysis.

The historical evolution and consistent use of qualitative data analysis software from 1966 until the present, attests to its inevitable strengthening within the academic community[8]. One software that has contributed to research accuracy and quality in the last five years is WebQDA®. WebQDA (Web Qualitative Data Analysis) is software designed for qualitative research for different areas, methods and techniques of data analysis, such as texts, audios, videos and images. However,

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the main strengths of this online platform are that it is easy to learn and use and enables sharing projects among a group of researchers (www.webqda.net).

There are many advantages to using Qualitative Data Analysis Software (QDAS), such as faster and more efficient data management, ability to handle a larger volume of data, contextualization of complexity, methodological technique and accuracy, systematization, consistency, analytical transparency and, lastly, the possibility of working collaboratively[8]. Apart from tools to analyze data collaboratively, software is also emerging to organize and manage research projects.

Given current scientific research requirements, it is crucial to structure projects structuring and manage research processes, whether in the context of postgraduate studies or the preparation of scientific articles. In other words, it is necessary to contemplate tools and strategies to ensure research feasibility and accuracy, structural organization of the project, communication and interaction among scientists, process management and, finally, internal coherence within a systemic, ethical and holistic vision of the products. All these requirements are essential during every stage of carrying out a study, from start to finish. Thus, tools emerge that help junior and senior researchers plan and manage research projects, such as Isabel Alarcão Research Software (IARS®).

IARS® (www.ia-rs.com) is a web application to support research, ranging from construction of the research project to writing the final version of the article[9]. IARS® is a project manager, whether qualitative, quantitative or mixed, in advisor-advisee and collaborative work in an immersive and distributed environment such as the Internet can provide. That is, its gives researchers: i) the conceptual organization of a research project; ii) identification of conceptual, organizational and stimulative issues for preparation of a research project; iii) greater and better interaction between the advisor and advisee and/or members of a dispersed group of scientists; iv) stimulus for systematic organization of the project and research results; v) development of research competencies and attitudes that facilitate the preparation of scientific papers; vi) greater internal consistency in the research project development stages; and v) knowledge of the functional structure of different methodological approaches. Although project management tools exist, none of them is designed and structured to meet the needs of areas of research in human and social sciences, such as education, nursing, sociology, psychology etc.

This article coincides with the findings of many academics who claim that the use of technological tools in qualitative and/or quantitative research should serve only as a support for better registration, visualization, organization and systematization of data[10-13]. It by no means dispenses with the analysis and examination of researchers and their perception of the phenomenon and understanding of the results. Especially when authors[4] indicate that in qualitative research, besides the research process being essential, the researcher plays a key role.

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