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Understanding the Marriage of Technology and Phenomenological Research: From Design to Analysis

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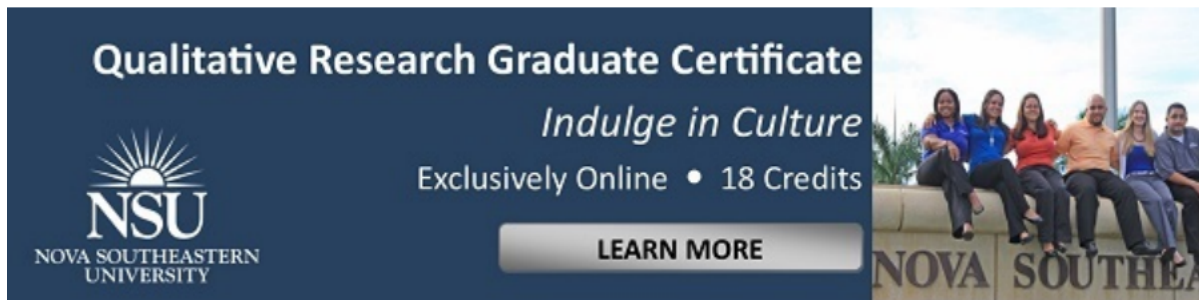


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Abstract

Phenomenologists seek to discover the universal essence of their participants' lived experiences through a reiterative analysis process. While phenomenologists (in transcendental and empirical approaches) often follow very traditional practices in conducting research, there are a number of alternatives available that can aid in the overall research process. From virtual interviews to transcription software, many of these tools provide varying benefits and they are especially useful for smaller scale phenomenological research studies (from 1 to 20 participants). In this article, the authors discuss a number of technology choices including virtual interview practices, transcription procedures, researcher reflective portfolios and qualitative analysis techniques using spreadsheet programs.

Keywords

Transcendental and Empirical Phenomenology, Technology, Analysis, Interviewing Techniques

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Understanding the Marriage of Technology and Phenomenological Research: From Design to Analysis

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Phenomenologists seek to discover the universal essence of their participants' lived experiences through a reiterative analysis process. While phenomenologists (in transcendental and empirical approaches) often follow very traditional practices in conducting research, there are a number of alternatives available that can aid in the overall research process. From virtual interviews to transcription software, many of these tools provide varying benefits and they are especially useful for smaller scale phenomenological research studies (from 1 to 20 participants). In this article, the authors discuss a number of technology choices including virtual interview practices, transcription procedures, researcher reflective portfolios and qualitative analysis techniques using spreadsheet programs. Keywords: Transcendental and Empirical Phenomenology, Technology, Analysis, Interviewing Techniques

Researchers using phenomenological data from traditions heavily rooted in the work of Moustakas (1994) and Giorgi (2009) often encounter two challenging points within their research process. Once when they collect text through interviewing and again when they must analyze, read/reread and make sense of that text. For instance, Moustakas (1994) recommends multiple steps in analyzing interview transcription that include the use of grouping, reduction, elimination, and clustering among others. Giorgi (2009) provides concrete steps that include holistic reading, determination for meaning units, and transformation from the natural attitude among others. Given the complexity of these steps, we suggest here a marriage of technology and phenomenology. Of course, phenomenologists can utilize numerous traditional methods for this process (Creswell, 2007; Giorgi, 2009; Moustakas, 1994); Patton, 2002; Sokolowski, 2008; Van Manen, 1990), however there are a number of applications and software packages available as alternatives. These applications and software packages can assist the researcher in making the overall process less cumbersome and more efficient while ensuring the complexity of the lived experience remains whole. For instance, interview tools (e.g. audio recorders, virtual voice-over internet protocols and audio editors) provide methods of recording, editing and working with interview text that is secure, transferable and permanent. During the transcription process, additional tools allow for more efficient and safe renderings of recorded text through the combination of the transcription, voice recognition and word processing software. Finally, the use of a common office program (MS Excel), typically thought of as a formula/number cruncher, is very much an appropriate tools for making sense of the text during the analysis phase (Meyer & Avery, 2009). In Moustakas (1994) and Giorgi (2009), the analysis phase fits nicely within the often linear and column-based underlying structure found in a spreadsheet application like MS Excel. In fact, our initial decision to investigate a spreadsheet application came about when we carefully read through Giorgi (2009) and his application of the method in chapter six. He uses the experiences of jealousy to illustrate his method. Using columns, Giorgi provides the meaning units in "language revelatory of the psychological aspect of the lived-through experience-" (2009, p. 145). The language within

these columns connects the various stages of his analysis together and provide an overall cohesiveness to the process. After reviewing his process, we found a spreadsheet program an ideal fit with these techniques. In conjunction with other techniques, these tools offer important benefits in terms of effort and time and they also create additional opportunities for helping the researcher interpret the text, especially within phenomenological research.

As much of phenomenological research requires multiple interviews, multiple readings of collected text and multiple interactions with the text, the process of collecting, creating and analyzing through these possible tools preserves the essence of the phenomenological process and gives the researcher the opportunity to expend time and resources in learning about the lived experience of the participants. As Meyer and Avery (2009) note, the need to be able to connect qualitative data from one bit to another has led to a plethora of choices in qualitative data analysis software. Many of these choices offer numerous tools for conducting, transcribing and analyzing text and they are often efficient for organizing large amounts of data. While these programs are powerful, many of them require a steep learning curve and additional training. In addition to this learning curve, these programs are often cost-prohibitive to many researchers.

Benefits for Small Scale Studies

For many phenomenologists working with a smaller pool of participants, many pre-packaged qualitative software programs often provide little benefit when weighed against other less expensive and more common tools. In this article, we demonstrate a process for working with transcendental or empirical phenomenological research that utilizes a number of free, low-cost or otherwise common software programs or applications (see figure 1.1). We cover interviewing techniques (especially for at-a-distance interviews), transcription applications and spreadsheet tools. We also discuss these techniques and tools through the lens of a dissertation study on the lived experiences of indigenous educators (De Felice, 2012b) and a study on the experiences in learning an endangered language (De Felice, 2012a). We believe that linking this study to these tools will allow us to better demonstrate their efficacy and usefulness. Finally, we end with a discussion on how to use each of these tools together within a phenomenological framework.

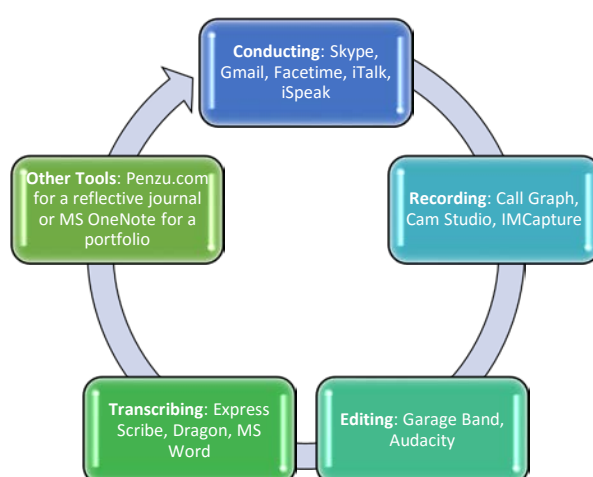


Figure 1.1. The life cycle for virtual interviewing. This figure contains an overview for many of the tools we will cover in this article.

Our examples stem from the following dissertation (De Felice, 2012b) on indigenous educators. In this dissertation, I (Dustin De Felice) worked closely with my committee

(especially with Valerie J. Janesick as the committee methodologist). For the remainder of this article, we will utilize first person singular when discussing the procedures within De Felice (2012b) and first person plural when we discuss our ruminations together on what we learned about transcendental phenomenology and the influences on Moustakas' (1994) method that we encountered due to technological choices. We also refer to De Felice (2012a) for examples of empirical phenomenology and the techniques from within Giorgi (2009). Many of our techniques began with our exploration of his work and use of columns to explore the collected texts (transcriptions, writing prompts, etc.).

In De Felice (2012b), this transcendental phenomenological study focused on indigenous educators and their experiences teaching online. These educators from Mexico were tasked with teaching, studying, and integrating technology within an online environment for a predominantly US audience through distance learning platforms. Within this study, we provided these educators "the opportunity to have a voice" (Janesick, 2007, p. 117) as well as to reflect on their own journeys. We worked with participants who were in their early or late twenties from the following settings where an indigenous language (Nahuatl or Yucatec Maya) or culture was the subject of instruction through either synchronous (real time) or asynchronous (anytime) tools.

As this research study was firmly situated in a qualitative, transcendental phenomenological tradition, we collected various texts and we analyzed each of them in order to have diverse perspectives that enriched the possible interpretations of the phenomenon under investigation. In order to demonstrate and explain the tools we used, we discuss the ways we collected three types of texts. I interviewed the participants through Skype in either English or Spanish for a maximum of three hours for each research participant (I allowed the participants to choose the languages used and I often conducted the interviews with a mixture or blend of languages that depended on the participants' preferences). This interviewing adhered closely to Rubin and Rubin's (2005) responsive interviewing model. Through this model, I was able to guide these educators in reconstructing their experiences into an extended discussion on the phenomenon in question. Upon completion of each session, I transcribed each of the interviews. In their time between interviews, I asked the participants to reflect further using some writing prompts that I provided in English and Spanish.

Virtual Interviewing Techniques

As we were not in the same geographic region as our participants, we needed to develop a set of procedures for working at-a-distance. Our intention for this portion of the article is to explain the analytical decisions we made in interviewing and transcription completion. In the end, our decisions influenced our procedures and the way we approached the study. As such, we begin with those interviewing procedures through Skype, our recording through Call Graph and our use of voice recognition software to create the transcripts.

In De Felice (2012a & 2012b), I conducted the interviews through Skype and recorded them using an outside program called Call Graph. I would initiate the call through Skype at the arranged time and once the participant accepted the call, Call Graph would immediately begin recording (see figure 1.2 for Skype, Call Graph and the recording message).

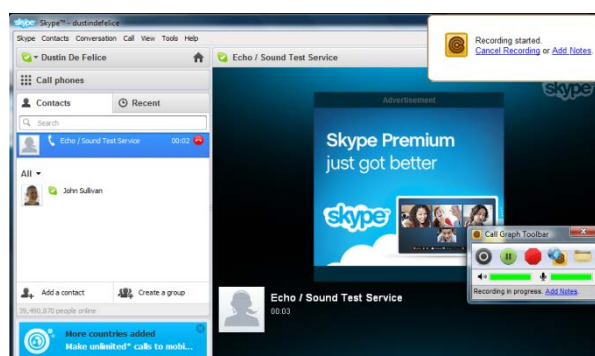


Figure 1.2. Skype and Call Graph screenshot.

This screenshot contains an image of a sample audio-only call that was being recorded by Call Graph. This recording program is located on the bottom right of the screenshot and has two volume bars for monitoring the call quality among other tools. Call Graph will also send messages updating its status. In this screenshot, the message is located in the upper right corner and it indicated that the recording had started.

In many interviews, I would use the video option in Skype. However, there were a number of times when the connection quality was so unreliable or poor that I completed the interviews using audio only. By removing the video feed, the quality of the recording would always improve.

We chose to use Skype instead of other possibilities (e.g., landline interviews, other voice-over internet protocol services, etc.) for two reasons. First, the Nahuatl-speaking participants were already using this program in their daily lives. This connection to their daily lives fit within a phenomenological approach because we were interested in their use of virtual technologies as part of the phenomenon. As van Manen (1990) noted, phenomenology only works when the researcher and the researched have firsthand experience. Using Skype allowed us to simultaneously discuss their lived experience with the tool while interacting together through it. At times, we were able to clarify specific points about the ways in which these participants utilized Skype in their teaching and we were able to participate in some of the strategies they employed during their teaching sessions. Second, the program was available at no-cost to its users. We would later learn that the Mayan participants were also familiar with the program and their university supervisor maintained an account. Some of these participants would choose to complete their interviews on campus and, often times, they would use their supervisor's account and her office.

There were a number of features that also made Skype a powerful tool for completing the interviews. While the program offers audio and video capabilities, it also has a chat function embedded in the program. This chat function is available whether or not a user was connected by a call. In other words, the chat worked much like an instant messenger service. I would take advantage of this feature to share consent forms, interview questions and other notes with all of the participants. The participants would also use this feature to contact me if we were online at the same time. In many cases, we utilized the chat feature to share our observations and notes with our participants. This connection to the written word allowed us another opportunity to reread the words, experiences and beliefs of our participants. Moustakas (1994), van Manen (1990) and Giorgi (2009) each call for immersing oneself in the data and text multiple times. We found this additional use of the chat function allowed us yet another chance to participate in that immersion along with our participants.

Above and beyond the advantages in Skype for the participants, Skype also had a number of add-ons available that we investigated for recording purposes. Finding a program with recording capabilities was crucial for this study and I would investigate a number of options unsuccessfully before searching outside of Skype's add-on library. I would find a

program called Call Graph that while it worked outside of Skype, it was synchronized to work in tandem with it. This synchronization meant I was able to use Skype without worrying about monitoring any recording I completed. Call Graph was also useful because upon completion of the Skype call, Call Graph would send the completed recording as an MP3 file directly to the computer desktop in a folder.

Editing through Audacity

Upon receipt of the file, I would open it using Audacity (a free program) to complete some minor editing tasks. I would use Audacity to edit files to remove any sections of the recording that were not relevant to the research in hand as well as to fix any problems that occurred with the Skype call (see figure 1.3). Many times, a call would be interrupted because of issues with either Skype or the Internet and I would need to piece together those conversations into one whole conversation. Additionally, I used Audacity at times to cut the conversation into chunks of about 10 to 15 minutes in length. I found this step assisted us in the transcription process because I was able to open up a file that was only 10 minutes long versus working on a file that was more than an hour long. This chunking of the audio file made it easier to work through the interviews over a long period time.

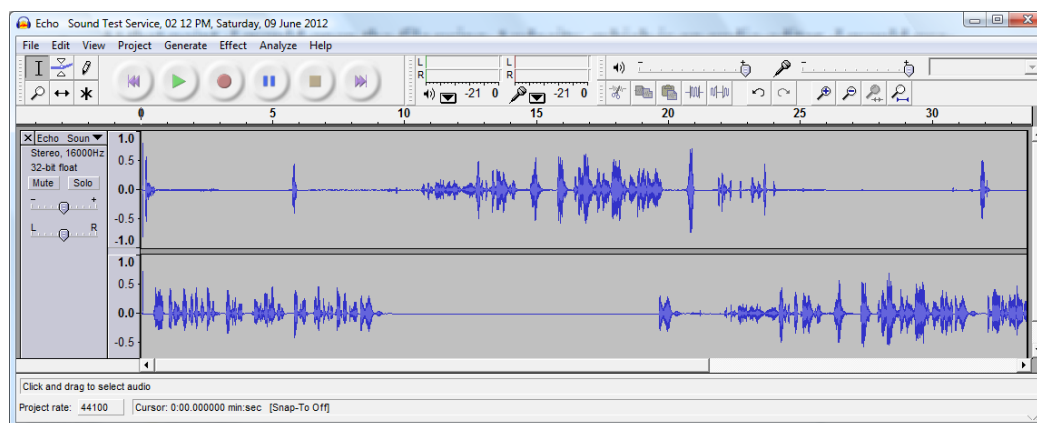


Figure 1.3. Audacity screenshot.

This screenshot contains an image of a sample audio file that had been recorded from a Skype call using Call Graph. This audio-editing program has a number of powerful features that include the ability to remove sections, loop parts and export finished work as MP3 files.

Transcription with Express Scribe, Dragon and MS Word

With the completed audio file exported out of Audacity as an MP3 file, I would then import that file into Express Scribe, which is a transcription program (see figure 1.4). I utilized two different options within the Express Scribe program. Initially, I began to transcribe using Microsoft Word as an additional screen. After I became more experienced with Express Scribe, I found it was easier to use the transcription function directly within Express Scribe and then to copy and paste sections from within Express Scribe about every 10 to 15 minutes. I would copy and paste those sections into Microsoft Word and save it as an additional backup for the work.

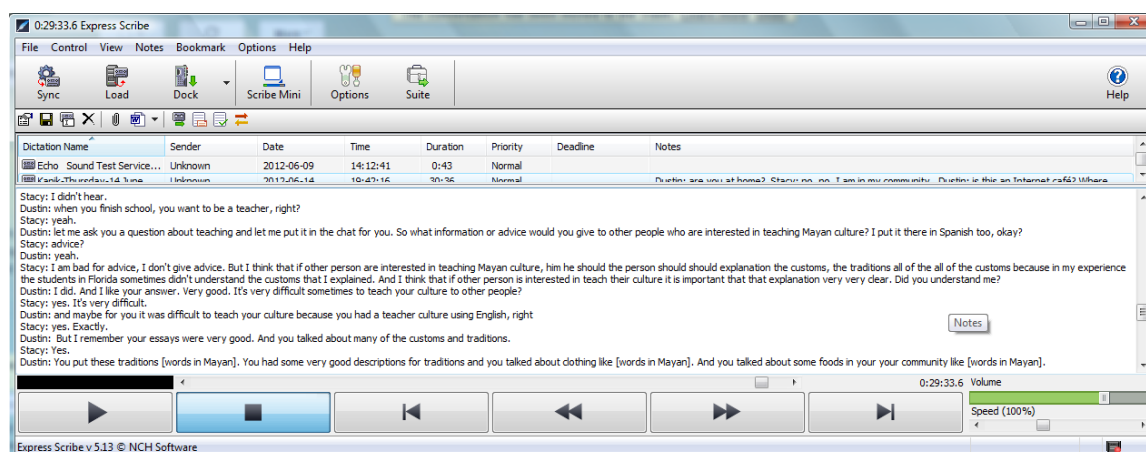


Figure 1.4. Express Scribe screenshot.

One feature from within Express Scribe that allowed me to efficiently and accurately complete this transcription process was the fact that it enabled users to slow down the speed of the file. I normally slowed the speed down to about 45% and this reduction in speed allowed me the opportunity to transcribe efficiently.

This screenshot contains an image of a sample audio-only call that was being recorded by Call Graph and cleaned up within Audacity. Once I loaded the file into Express Scribe, the transcript was created within the program. Express Scribe offers a number of important features like controlling the speed of the recording. This speed control was an important time-saving feature and is located on the bottom right of this screen shot (listed as Speed (100%).

I also used one last modification during this transcription process. I began using voice recognition software a few years ago and found it to be an incredible resource and time-saver when transcribing. I would use Dragon NaturallySpeaking 11.5 (current version is 13) to speed up the overall transcription process (see figure 1.5). Though this program had assisted me in past research projects, I ran into one challenge with this modification. Since I was working with files that contained both English and Spanish, I needed to purchase the Dragon program in both languages. The versions I purchased did not allow a user to put two different language versions of the software on one computer. Instead, I needed to install the English version on one laptop and the Spanish version on another. This split also meant I needed to concentrate on one language only until I could move the file to the other computer that contained the correct language version of Dragon.

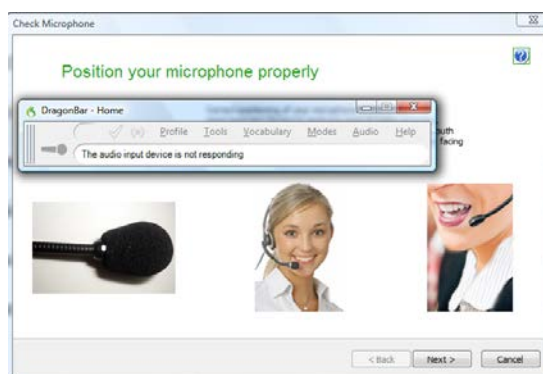


Figure 1.5. Dragon NaturallySpeaking 11.5 screenshot.

This screenshot contains an image of the Dragon toolbar, which we normally maintained in the background as an icon in my toolbar. The version in this screenshot is for the English version.

I used Dragon as a transcription tool, commonly referred to as the “Parrot Method,” in that I would listen to the interview in the headset and I would speak back what I heard into either Microsoft Word or Express Scribe for my own voice and that of the participants. We developed this procedure because we found that by using just a keyboard and Express Scribe we were only able to transcribe roughly 30 to 40 words per minute. Once I began using Dragon I found I was able to transcribe closer to 150 words a minute. By following all of these procedures, I created all of the transcriptions (with some additional help in transcribing the interviews completed in Spanish). An additional benefit for creating our own transcripts stems from the necessity for a phenomenologist to immerse him or herself into the words and phrases of the participants. As we listened and transcribed, we were able to place ourselves into our participants by being their voice. In fact, placing ourselves in our participants’ voice is problematic when using the steps laid out by Giorgi (2009). His procedures include a step devoted to transformation. He added this step because he found “students had a strong tendency to identify with the experience of the describer if the descriptions were left in first-person expressions, and that is not the proper attitude to adopt.” (p. 154). However, this additional time spent revisiting the recordings, the transcriptions and the transformation step (for empirical phenomenology) was another opportunity for us to connect with our study. This intimate connection through the transcription process was beneficial once we began with the analysis stage and it was an unexpected, yet appropriate result of constructing transcriptions in the way we have described.

Researcher Reflective Portfolios

During the process of working through the text and the research process, we recommend maintaining a reflective portfolio. This portfolio can be a space to evaluate the work externally and internally. Janesick (2016) noted that portfolios have been used in classrooms to provide evidence for ongoing learning, for record-keeping and for showcasing the work done by students. In this particular study, we made incorporated the researcher’s reflective journal as a centerpiece of a portfolio that we assembled electronically to include various sections that documented our journey through the research process.

Our initial push toward this researcher reflective portfolio began with our discussions on the challenges present in attempting to reach Epoché. This process of setting aside what Moustakas (1994) referred to as “our prejudgments, biases, and preconceived ideas about things” was a constant discussion throughout the research process (p. 84). In fact, this ongoing process began much earlier when I first experienced part of the phenomenon (De Felice, 2008). Looking back on those earlier experiences, we realized that the attempt to set aside our prejudgments, biases and preconceived ideas required constant reflection, discussion and attention. We came to dedicate a space for these discussion within our portfolio (indicated by our decision to create a specific page for this inquiry unto itself).

Based on the long history of journaling writing in various fields and endeavors (Janesick, 1998), we built on this tradition through the incorporation of new technology tools that allowed us to go beyond the written word. We explore this portfolio more fully in the next section because it became an integral part of the research process while providing a space to develop as a researcher and to analyze the ongoing thought process. Lastly, we detail how this portfolio became an invaluable space where we were able to record the overall progress with this research project in a safe space. These types of researcher reflective portfolios are perfect vehicles for developing ideas, continuing ones growth as a writer and encouraging creative uses of language, visuals and poetry. As Janesick (2016) stated “the researcher is the research instrument in qualitative research projects,” and he or she needs to “sharpen awareness” by engaging in a number of activities, tasks and collaborations (p. 173). For instance, we put

together and used the researcher reflective portfolio as a text source where we could write about experiences, feelings, interpretations, and intuitions throughout the research process.

Such a portfolio can serve to document the role of the researcher, as a triangulation of perspectives from the research process and, when possible, as a connection between the participants and the researcher (Janesick, 1998). Because these portfolios are best served by an open-ended format, the researcher is then able to interact with any issue or topic in a creative and safe virtual environment. Such a space allows the researcher the ability to write freely about what he or she encounters before, during and after completing the interviews or in sharing the transcriptions with the study participants, among other tasks.

Figure 1.6 is a screenshot of one section of an example researcher reflective portfolio. The different sections within the portfolio are listed across the top of the window (starting with Reflective Portfolio and ending with Brainstorming). The current section is on brainstorming and it shows examples of the screen clipping tool as well as the ability to organize items anywhere on the page.

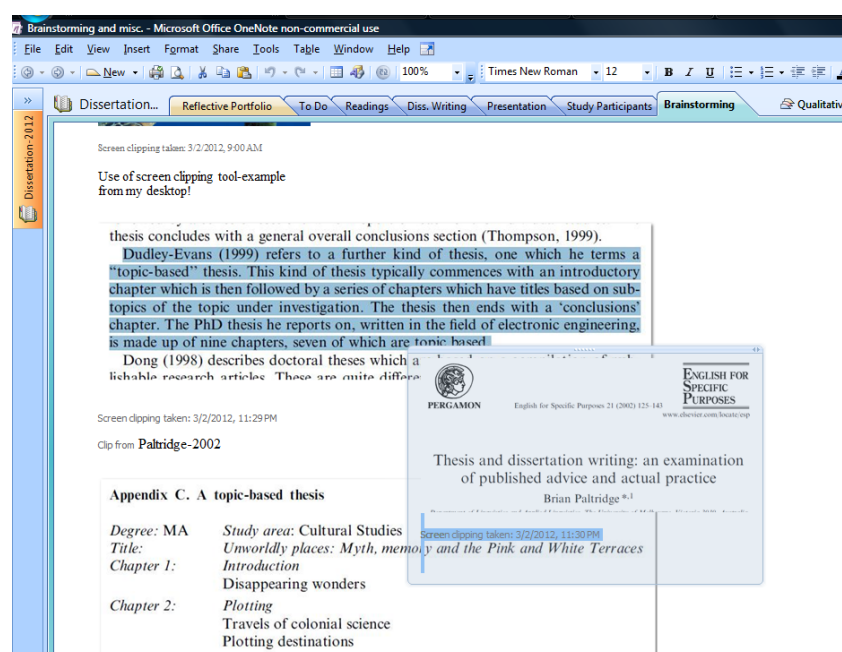


Figure 1.6. Reflective portfolio screenshot.

Within this electronic portfolio, there can be simple text-based entries as well as multimedia files embedded throughout. The use of software allowed for the inclusion of audio, video and picture files as well as screen clipping capabilities. In figure 1.6, we show a screen shot of one section of the program. In the case of De Felice (2012b), I added material into the portfolio using English, so I was not able to use many entries with the participants who did not read English.

Of course, sharing many portions of a researcher reflective portfolio with the participants leaves the researcher open to differences of opinion. When conducting phenomenological research, the phenomenologist must ensure that the foundation of this study is the participants' emic voices. Such a focus means the researcher must kept returning "to the things themselves" or the maxim of phenomenology (Moustakas, 1994, p. 27). As such, we recommend resolving any differences by opening a dialog about the item(s) in question and reevaluating the researcher's own stance. In the end, the researcher should strive for siding with the opinion of the participants because the phenomenon under study is from their lived experience. In De Felice (2012b), one example of such an interaction occurred when a number of participants reported having difficulty reading the transcripts because I chose to use very

limited punctuation to preserve the fluidity of the spoken word. Since my participants had difficulty, I decided to include more punctuation to aid in readability. In the end, these changes helped my participants better attune themselves to their lived experience in a written form.

A portfolio, as we have described, can serve many roles and it becomes a place to turn to when the researcher needs to write. In many ways, some academic writing is limited in terms of creativity and intuition because of the rigid and linear demands of it as a traditional document. Janesick (2000) saw “the nature of Intuition and Creativity as a key component in qualitative research projects” (p. 5), so we recommend using the portfolio to engage in activities like the writing exercises found in Janesick (2016) and Piantanida and Garman (2009). These activities include creating collages, drawing scenes, reflecting on specific writing prompts, among others. Using OneNote (another tool available within the MS Office Suite), the researcher can incorporate clippings of photographs, articles, comics, and illustrations that have some connection to what is being worked on. We also recommend sharing this portfolio (or portions of it) with colleagues who act as peer reviewers. While this type of formal exchange is important, the open-ended nature of the portfolio invites sharing with colleagues informally and naturally.

Sharing portions of writing (after the removal of all identifying information) can help to ensure the writing and analysis are clear, accessible and thorough. Janesick (2016) included the use of peer reviewing for the texts, transcripts, and journal entries as one of many checkpoints for supporting the researcher’s claims and interpretation. We encourage the invitation of a number of individuals to review the portfolio and text analysis to offer more perspectives and interpretations and to further triangulate the various texts analyzed.

Excel as a Text/Data Analysis Tool

Throughout the research process, one tool can serve to house all of the collected/created text: Excel as a Text Analysis Tool. Many qualitative researchers often overlook this tool as it often appears to work better with numbers instead of text. As Meyer and Avery (2009) noted, it is as powerful a tool for the written word as it is for number and figures. After much trial and error, we decided this analysis tool was the right fit for this dissertation work. We hasten to note that each qualitative work is unique and the description we provide may not be suitable for every project. In any case, we outline the steps we took to convert text sources into files ready for importation into a spreadsheet. This conversion process is an important step in making the files render properly (or as desired) in the spreadsheet program, which is what we chose to use for our analysis.

Of course, the decision to use Excel as a data analysis tool has a number of ramifications for qualitative research that may require additional modifications or revisits to procedures in place. We recommend the following procedures for using Excel as a data analysis tool. Upon completion of each interview transcription, send them back to the participants and asked them to review the file. In De Felice (2012b), I encountered a challenge with sharing files that may be unique to my particular participants. Initially, I sent the files as attachments and asked my participants to work with an attached MS Word document. In a number of instances, I did not receive any response from some of the participants. After talking through my process with my participants, I found out that by sending the files as attachments I was inadvertently limiting access for my participants. Many of them were accessing the files at Internet cafés or on their university Web server. At times, these locations have pop-blockers or other systems in place that restrict access to attachments. As such, we recommend revising procedures to include sending most files as text within the body of the e-mails rather than as attachments.

After participants finish reviewing the transcripts and making any changes they felt necessary, those transcripts are ready for importation into Excel. In order for this process to

work, there are a number of steps to ensure that the import process creates a usable file. Within the original transcription file, which should be in a .DOC file extension, begin removing any hard tabs, extra hard returns, colons not listed after the name of the participant and any empty spaces between lines. These types of common formatting items can create undesired results in Excel as reported in Meyer and Avery (2009). We recommend formatting each document so that each line of text has a participant's name followed by a colon marking each meaning unit or utterance the person made. We would also like to point out that these procedures will also work (with minor changes) in any word processing and spreadsheet program like Google Drive, OpenOffice, etc.

Analysis Steps from MS Word to MS Excel

To ensure the transcription material renders properly in Excel, follow the formatting steps in table 1.1. In addition to those steps, the researcher must reread the entire transcription in order to check for any identifying information that needs to be removed or modified. This information can be items like names of institutions or universities, names of specific towns and cities, and names of individuals, among other types of identifying information.

Table 1.1. Checklist of steps for importing a file in MS Word format to MS Excel

Step #	Description of Steps
1.	Within MS Word document, remove all tabs, hard returns within paragraphs or more than 1 consecutive throughout and empty spaces of more than 1 in a row.
2.	Ensure format of materials is in this way: NAME: TEXT (followed by hard return before next entry).
3.	Ensure all identifying information has been removed or modified.
4.	Save MS Word document as a .txt file format.
5.	Import .txt file into MS Excel in cell A1 (or the first open cell in the worksheet).
6.	In the MS Excel menu, choose <i>delimited</i> because the text is separated by a colon.
7.	Within the <i>delimited</i> step, chose <i>other; colon</i> as the choice for the delimiter.
8.	Choose text for the data format to ensure MS Excel does not convert dates into numbers, etc.

The following screenshots and descriptions provide more details for the rest the steps in table 1.1. We provide this step-by-step guide as an example of one way of using this spreadsheet program as an analysis tool. These steps ensure the text is in a useable format and that the procedures closely align with the work of Moustakas (1994). His procedures lay out one of many ways of achieving a universal essence of a phenomenon under scrutiny.

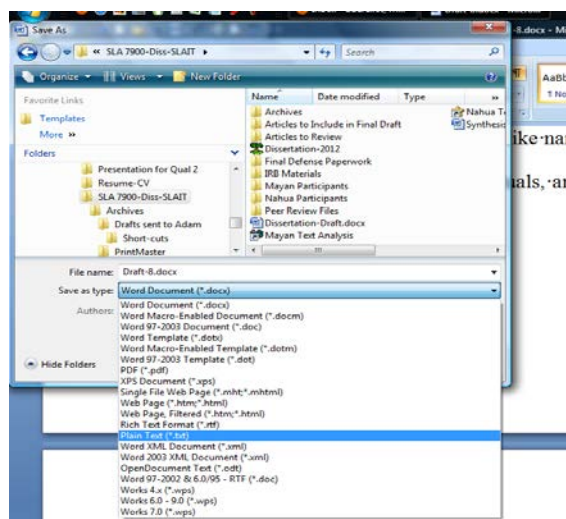


Figure 1.7. Save as function screenshot.

Using MS Word 2007 or 2010, save .docx files into the .txt format upon completing the steps in table 1.1. This .txt format was one of the only acceptable formats that can import directly into a MS Excel 2007 or 2010 spreadsheet. Rather than simply copying and pasting the text directly in, utilize the import feature because it allows for a number advantages in terms of how the text is displayed within the spreadsheet.

Excel (and many other spreadsheet programs) require files as a.txt or plain text format (see figure 1.7). This formatting step allowed Excel to accept the text in a usable form using the data function and importation tab within Excel (see figure 1.8). Use the import tab to import the information into the appropriate spot in the spreadsheet, which is marked by an open cell under the participation column. In order for the text to render properly, complete the following selections (see figure 1.9).

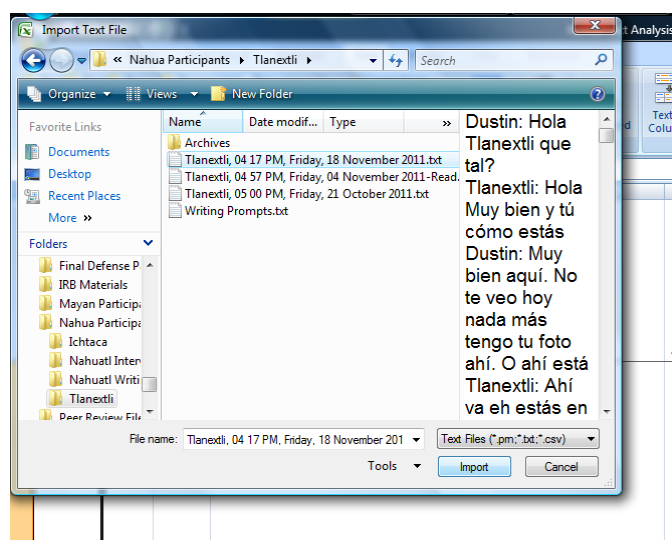


Figure 1.8. Import wizard for text files screenshot.

Excel's importation tab only accepts text files and provide a preview of the saved file.

First, we recommend choosing delimited text rather than a fixed width (see figure 1.9). This limits the text that goes into cells based on a specific chosen symbol (in this case, a comma).

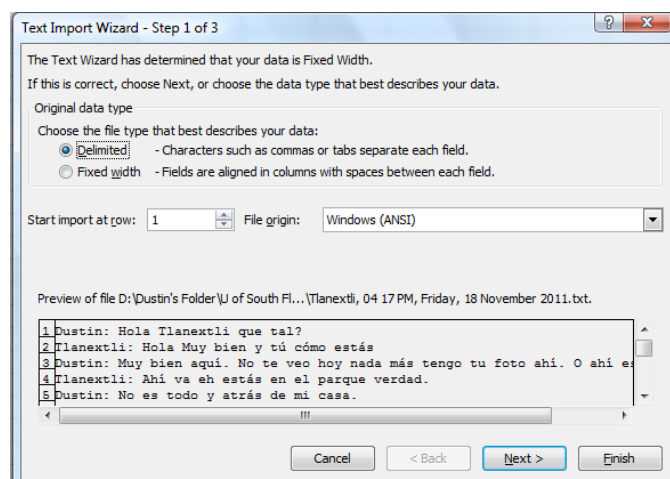


Figure 1.9. File type choice screenshot.

The preview window provided a chance to review the original text file. If the file was formatted correctly, the conversation would appear with the participant's name followed by a colon.

We recommend using the colon as the symbol of choice, though there are a number of options that can suit various transcript formats (see figure 1.10).

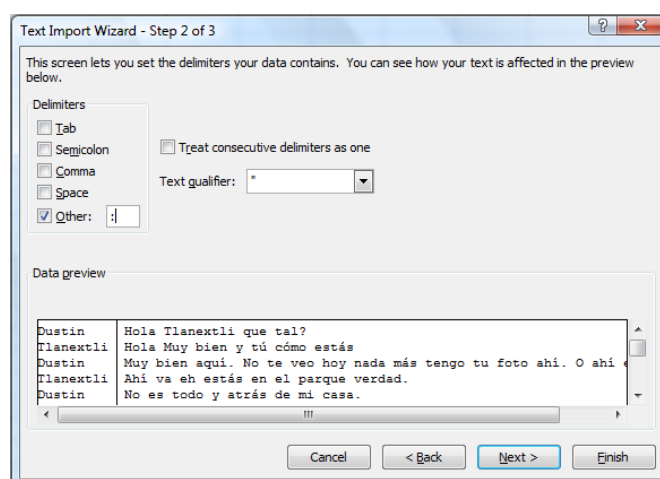


Figure 1.10. Delimiter option screenshot.

The text import function allowed for a number of delimiter options. In this example, we chose the colon as the symbol that indicated a change in conversation speaker.

Finally, choose “text” for the data format because Excel needs to understand that imported text is text rather than equations, dates, time, etc. (see figure 1.11).

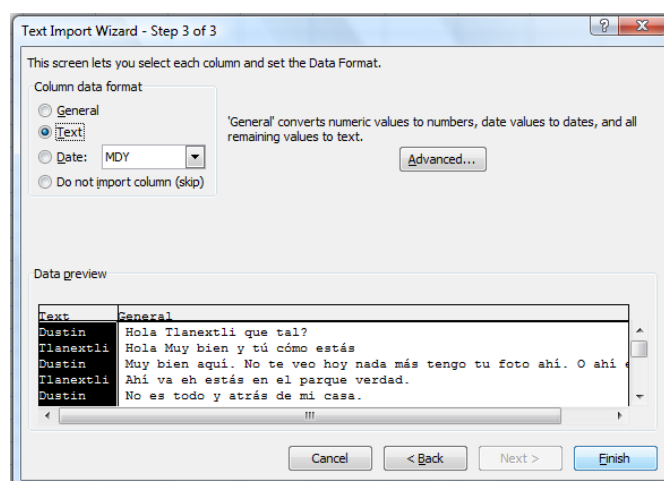


Figure 1.11. Text formatting option screenshot.

For the text formatting options in this example, we chose the data format as text, which included numbers, date values as well as text.

Once these steps are completed, the text will appear in the appropriate columns throughout the Excel spreadsheet (see figure 1.12). We developed these guidelines in conjunction with the work of Meyer and Avery (2009) where they lay out a number of procedures and considerations for the use of Excel as a qualitative data analysis platform.

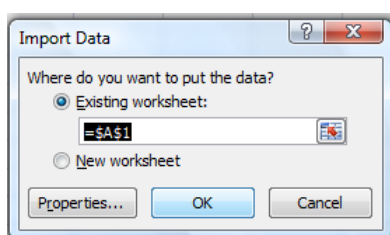


Figure 1.12. Final import step screenshot.

The final import option involved placement into the spreadsheet. The default choice was column A row 1.

We completed all of the steps in table 1.1 for the interview files, writing prompts, and the artifacts collected from the educators. These files were also imported in separate worksheets within the final Excel spreadsheet. We did maintain one shared worksheet where the final textural-structural descriptions for all the participants were shared. We completed this step to allow us to see the final descriptions together, which was important for working on the composite textural-structural description.

Modifying Procedures to Fit MS Excel

While these steps are useful, we encountered some difficulty in completing the analysis steps in table 1.2 because of the inflexibility and linearity of a spreadsheet program like Excel. After reviewing the procedures and searching for the meaning behind each step, we modified the procedures to ensure we were completing the steps in the analysis technique laid out by Moustakas (1994) while also conforming to the rigidity of the MS Excel spreadsheet.

Table 1.2. *The Steps Outlined for Each Individual Participant in this Chapter.*

Step	Used to Reach:	Description of Step
1	phenomenological reduction	Compile a list of invariant horizons, which are the non-repetitive, non-overlapping meaning units for the experience.
2		Complete first cycle coding procedures for In vivo (see description of modification below).
3		Complete second cycle coding procedures for Focused coding (see description of modification below).
4	imaginative variation	Using themes, cluster and relate the invariant meanings.
5	Synthesis	Including verbatim examples, synthesize “a description of the textures of the experience” (Moustakas, 1994, p. 122) using the invariant meaning units and themes.
6	imaginative variation	Using imaginative variation, construct “a description of the structures of the experience (Moustakas, 1994, p. 122) by reflecting on the textural description from step 2e.
7	Synthesis	Using the meanings and essences, construct “a textural-structural description” (Moustakas, 1994, p. 122).

Given the linearity of spreadsheets, we needed to create a slight modification to the order of analysis steps for creating meaning units (in Moustakas’ procedures, the meaning units process was step 3). Due to the nature of Excel spreadsheets, we needed to complete the meaning units step prior to importing this information into the spreadsheet. In order to accomplish this step, we added hard returns in the MS Word documents from the interviews, the writing prompts and the artifacts to the meaning units.

Before we can discuss more about the use of Excel as a data analysis tool, we need to describe the analysis steps we took. We completed the steps outlined in table 1.2, which we based on Moustakas (1994) and Saldaña (2009). Step 1 in table 1.2 is a modification to Moustakas’ procedures (1994, p. 122) whereby we delineated the meanings units prior to importing them into the Excel spreadsheet. These invariant horizons, or meaning units, were for the experiences of each participant. Using those invariant horizons, we analyzed the transcriptions and other artifacts for language used by the participants themselves. In step 2, we used the procedures for In Vivo coding in Saldaña (2009) where we used this step to help us better attune to the language used by the participants and to assist in relating and clustering the invariant meaning units into full themes. In Vivo includes reading the interview transcripts to attune the researcher to the words and phrases that featured clever wording, ironic phrases, similes or metaphors, action-oriented verbs or high impact nouns.

In figure 1.13, I provide a screen shot of this column in my excel spreadsheet (I organized this spreadsheet using the suggestions in Meyer and Avery, 2009). Each column in the spreadsheet corresponded to a step in the analysis process with the In Vivo codes listed under column F.

was the same row as the In Vivo Code. This step allowed us to use the *Sort* function with the spreadsheet to move all Focused Codes together while keeping their original In Vivo Code with them. We used this tool to ensure the Focused Codes matched up with the first cycle step. By seeing the Focused Codes in groups, we were able to complete a self-check on the appropriateness of the category we generated. While these steps were modifications to the original procedures (from Moustakas, 1994), we believe they offered clear steps for engaging directly with the language used by the participants.

Overall Virtual Interview: From Collection to Analysis



Figure 1.15. Overall tools for qualitative interviews.

In short, we summarize our procedures for conducting phenomenological interviews at-a-distance in figure 1.15. We used Skype to initially call our participants. Once the call was accepted, Call Graph began recording the session. Upon receipt of the recorded conversation (audio-only), we used Audacity as an audio editor to clean up and segment the file. Through the “Parrot Method,” we used Dragon along with Express Scribe to complete the final transcription document.

Since we utilized technology to help us with more than just the interviewing process, we summarize a number of possible tech tools for the overall qualitative research process in figure 1.16. There are a multiple of tools available to conduct an interview at-a-distance. We list three in the first column: Skype, Gmail Voice/Video Chat and FaceTime. As handheld devices continue to proliferate, these choices will continue to expand. For recording these sessions, we recommend Call Graph when using Skype and CamStudio or IMCapture for other devices. We utilize Audacity for editing our audio files and it is available as a free download for PC and Mac users. Depending on the available computer platform, GarageBand works for Mac users while MovieMaker works for Windows users. As we described in this article, we used a combination of tools to complete the transcriptions that included MS Word, Express Scribe and Dragon Voice Recognition software. Lastly, we outlined steps for using Excel as a data analysis tool, though there are other options available like QDA Miner and NVivo.



Figure 1.16. Overall Tech Tools for qualitative interviews and analysis.

In conclusion, we believe that while the researcher is an essential part of the research process, he or she can benefit from the use of technology during numerous points in the process. The tools will most likely change as the technology advances, but many of the principles we outlined can transfer to other tools. In fact, it is possible today to bypass the use of costly software for most of the process we covered through the use of various applications. Technology is the friend of the qualitative researcher and we think of our work here as a marriage between technology and the phenomenological qualitative researcher.

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