# A Researcher's Methodological Approach in a Dissertation of Master of Philosophy in Mathematics Education in Nepal

- Yubaraj Bhattarai

## Abstract

This paper explores on methodology approach applied for explaining assessment of mathematics to excavate assessment practices of students and teachers at secondary level in the context of Nepal. The paper uncovers the methodology section of a dissertation entitled "Assessment in Secondary Level Mathematics: A Narrative Inquiry" submitted to Nepal Open University to acquire a degree of masters of Philosophy in Mathematics Education. I portray the related phenomena to my research questions from ontological, epistemological, axiological, and rhetorical considerations. Then I describe methodological considerations related to research paradigm, research design, and sampling of data. Furthermore, I explore the data collection and analysis of my study, dividing it into different subheadings. I have thrown light on quality standards and ethical consideration followed in the research. The paper further excavates the data analysis, data interpretation of the methodology section of the dissertation. Finally, the paper concludes with discussion and conclusions about the applied methodology to conduct the study on mathematics assessment at secondary level in Nepal.

*Keywords:* Data Collection, Ethical consideration, Interpretative paradigm, Narrative inquiry, Philosophical consideration, Quality standard

## Introduction

The research methodology is the mechanism that provides the research site, methodology for collecting, processing and analyzing the data/field notes as per the necessities of research project. Furthermore, it is a worldview or the belief system that guided the researcher throughout the research process (Willis, 2007). I conducted my research using interpretative paradigm and narrative inquiry under qualitative research methodology by collecting the data with in-depth interview thereby drawing conclusion related to the perceptions, practices and attributes of research participants on assessment in mathematics. It helped me to describe the complex social phenomenon as the problem and collect peoples' individual attributes and experiences as the information for my research study.

As assessment in mathematics was my major research problem, I had explored several aspects related to it like peoples' perceptions and practices, their past experiences and stories. A brief outline of the ontological and epistemological positioning of the study was followed by a methodological story and has been narrated in a personal voice. The story was told within an ethical frame, showing how decisions about the method and the necessity for reflexivity are guided by my commitment to an ethical methodology. Further, this narrative inquiry design had been used to address the research question of my study. I discuss about philosophical consideration, research paradigm, research design, the context of research site and participants selection, nature and source of data, narratives generation, information handling, analysis and interpretation, quality standards, ethical

consideration. I made meaning from reflexive ideas of my participants. I also described my quality standards and ethical considerations, which I had to take care of as a researcher carrying out interpretive inquiry research.

## Research Question

My research explores teachers' perceptions and practices of assessment in mathematics at secondary level schools from grade IX to grade XII in Nepal. Within these assessment contexts, this paper had the following research question:

1. How do researchers apply a methodology section in a qualitative research method?

## Objective

The objective of this study is to explore a researcher's application of a methodology section in a qualitative research on assessment of mathematics of secondary level mathematics teachers in their career.

## Delimitations

This study is delimited to only methodology section of my research entitled "Assessment in Secondary Level Mathematics : A Narrative Inquiry" to award me the degree of Master of Philosophy in Mathematics Education. I did not employ similar other research paper to make a comparative and comprehensive study about methodology of qualitative research. Hence the sample selection was limited to n=1 for the study.

## Literature Review

The methodology is a critical section in any qualitative research as it provides a detailed explanation of how the study was conducted. The methodology section describes the procedures, techniques, and tools used to collect data, analyze it, and draw conclusions. This literature review aims to provide a comprehensive understanding of the methodology section in qualitative research.

Qualitative research methodology emphasizes the collection of data through non-numeric and non-standardized methods that allow for a deep understanding of the phenomenon being studied (Creswell & Poth, 2018). The methodology section includes a description of the research design, data collection, and analysis methods, sample selection, and ethical considerations.

Research design is the plan or blueprint that guides the research process. The design outlines the steps to be taken to collect data and draw conclusions from the findings (Guba & Lincoln, 1994). Qualitative research design can be exploratory, descriptive, or explanatory. Exploratory research aims to understand the phenomenon in-depth, while descriptive research seeks to describe the phenomenon under investigation. Explanatory research aims to explain the phenomenon and identify the relationships between the variables.

The data collection method used in qualitative research is crucial in ensuring the validity and reliability of the study. Qualitative researchers collect data using interviews, observations, focus groups, and document analysis (Creswell & Poth, 2018). Interviews can be structured or unstructured, and the researcher can choose to conduct them in person, over the phone, or through online platforms. Observation involves the researcher directly observing the phenomenon under investigation. Focus groups bring together a group of individuals who share common experiences or characteristics and engage them in a discussion about the phenomenon under investigation. Document analysis involves the collection and analysis of written materials that relate to the phenomenon being studied.

Ethical considerations are an essential part of qualitative research methodology. Researchers must ensure that their studies do not cause harm or discomfort to the participants (Creswell & Poth, 2018). Ethical considerations include obtaining informed consent from the participants, ensuring confidentiality and anonymity, and debriefing the participants after the study.

In conclusion, the methodology

section in qualitative research is critical in providing a detailed explanation of how the study was conducted. The methodology section includes a description of the research design, data collection and analysis methods, sample selection, and ethical considerations. Qualitative research methodology emphasizes the collection of data through non-numeric and non-standardized methods that allow for a deep understanding of the phenomenon being studied. Researchers must ensure that their studies do not cause harm or discomfort to the participants and follow ethical considerations.

## Methods

In this section, I explain the epistemology, ontology, axiology, and rhetorical context of the study as philosophical considerations. Further, I elaborated on interpretive paradigm, narrative research inquiry, sampling of respondent participants, and research procedure for meaning making. I have thrown light on quality standards and ethical consideration.

## Philosophical Consideration

The philosophical orientations for research are related to the nature of reality, knowledge system, value system and the ways of their expression which are ultimately directly or indirectly related to the methodology of conducting the research study. Different assumptions under philosophical considerations; ontological assumptions, epistemological assumptions and axiological assumptions are consecutively arising, which in turn give rise to the issue of research instrumentation and data collection processes (Cohen, Manion & Morrison, 2007). I had undertaken my philosophical considerations as follows. This section discusses to my research regarding ontology, epistemology, axiology, rhetorical consideration.

## Ontology

As stated by Pascal et al.(2011), the nature of reality in my study was socially constructed, experienced both internally and externally by the respondent participants, subjective, value-laden, and meaningful. Reality is subjective and varying from person to person. The respondents had their own view about assessment in secondary level mathematics. According to my ontological viewpoint, exchanges of interactions and communications among individual worlds assisted in the emergence of realities. I was neutral investigating the thoughts and characteristics of the respondents. My personal opinions had no bearing on the interpretation of their thoughts and experiences.

## Epistemology

The epistemology of my study, which seemed to explain experience using mental constructs, was the formation of assessment knowledge by secondary level mathematics teachers as respondent participants .This suggests that knowledge emerges from the interplay of consciousness with external realities. I always consider the stories told by respondent participants to be sources of knowledge. Thus, the epistemology of my study was subjectivism focused on the acquisition of process of mathematical knowledge in multiple ways through assessment.

## Axiology

My research was a value-laden, context oriented, and subjective portrayal of the educative phenomenon. Respondent participants had their own unique values and views regarding the world. The primary value was the assessment practices in secondary level mathematics classrooms. I provided equal value and opportunity to all respondent participants to reveal their stories related to the research quest in mathematics assessment. In my study, the characteristics, attitudes, and behaviors of the respondent participant were interrelated to the value system with which

they were engaged in their career.

## Rhetorical Consideration

I applied the appropriate structure of the written text, trying my best to make the language of my study reader-friendly. Every issue was clarified using simple and clear structures, avoiding vague and abstract structures. Likewise, I maintained simple sentences in my writing and avoided jargon and clichés so that readers could easily understand my argument and interpretation on my study.

## Interpretive Research Paradigm

The purpose of my study was teachers' construction of assessment at secondary level when they were students and in their professional life. For this, the interpretive research paradigm enabled me to offer a detailed description of the aspects that are critical for contextual interpretation (Bryman, 2012). The interpretive paradigm assisted me in reflecting on the significance of respondent participants' narrative accounts regarding their perceptions and practices in mathematics assessment. The new meaning can be drawn from interpreting and reflecting upon mathematics teachers' narratives, based on the context of my own and my contemporaries thoughts (Dahal, 2017). Thus, I selected an interpretive research paradigm for my study.

As stated by Denzin & Lincoln (2018), I attempted to find out how mathematics assessment is done through the experience of mathematics teachers in my research. Interpretive research design in educational research enables researchers to study the life-world experiences and classroom practices of research participants (Taylor & Medina, 2011). In this study, I used an interpretative paradigm to build a reflection of the respondents' understanding of context in other situations. This paradigm supported me in gaining a better knowledge of personal experiences of the respondent participants in mathematics assessment.

I strove to see the world through the eyes of a researcher who focuses on interpretation of reality with the help of an interpretive paradigm. Similar to Bhattarai(2022), I interpreted the life stories of the respondent participants, focusing on the natural setting. Rather than the exterior information they would have perceived, my attention and concerns in the interviews with the respondents focused on retrieving their inner interests, opinions, and real activities linked to mathematics assessment.

## Narrative Research Inquiry

To gain a reflective understanding of teachers' perspectives on assessment in mathematics classroom instruction, I employed a narrative research inquiry. This led to an interpretative paradigm in which I investigated the assessment perceptions and practices of secondary mathematics teachers in Nepal. Dickinson (2012) stated that narrative inquiry is 'the story of stories'. Narrative inquiry begins with an understanding and representation of reality through stories shared by the respondent participants. Personal stories of people are a natural aspect of their lives, and they are keen on sharing them with other people. In this way, narrative research preserves everyday stories of people in the form of data.

In narrative studies, I established a close relationship with the respondent participants. They may gain benefits by sharing their stories because they enjoy doing it. By telling their own stories, people are able to comprehend and identify issues and remember what they have learned (Creswell, 2007). The narrative research inquiry describes the real-life and behaviour of participants. They narrate their experiences, collect, and retell their

stories about the research topic. Dickinson (2012) stated that the intention of a narrative inquiry is to discover more about a specific situation, or a specific set of actors, or a socially constructed phenomenon. This study is a narrative inquiry into a time sequence, or timeline of events. Knowing an individual's history or experiences explains the influence on individuals' present and future experiences. In this process, the researcher retells the life stories of respondent participants in a narrative inquiry.

In this study, I encouraged participants to share their personal stories. For this, I conducted interviews in an informal conversational tone. Creswell (2007) stated that individual experiences through narrative stories could reveal insight into the identities and perspectives of people over emerging issues. Hence, throughout the conversations, I used narrative inquiry with emphasis on the views, beliefs, practices of mathematics assessment, and perspectives of respondent participants in their own words.

This study focused on five mathematics teachers' voices from Kavrepalanchok district in Nepal. It is a narrative inquiry founded on the premise that we establish our identities and understanding through our tales. Because one of the finest ways to reflect on experience is through narrative inquiry, this methodology is well suited for learning about how specific experiences influence mathematics-teaching practices (Christopher, 2017). In my study, I interviewed each respondent in the first stage. Secondly, I formed the stories from their narration and I completed the last stage of meaning making from their narrative stories.

## Data Collection and Analysis

I explain about the method of collection of data and their analysis procedure involved in my study in this section. These include sampling of respondent participants and their descriptions, nature and source of narratives, the narrating process, handling of narratives, and the meaning making of narratives.

## Sample Selection in the Study

A sample is a portion of a larger group that chosen to be typical of the complete group. It is also a tiny fraction of the population from which data is collected, analyzed, and interpretations are made. According to Paton (1990 ), qualitative research usually focuses on small-sized samples, even single cases (n = 1), that are chosen purposively. Qualitative research focuses on small groups of respondent participants. The data for my study were obtained from the experiences and stories offered by responding participants in in-depth interviews. I adopted purposive sampling technique in my study to account for these characteristics. Five in-service secondary mathematics teachers who used a variety of assessment methodologies and approaches in their classes were chosen as respondent participants in the study. The respondent participants in Kavrepalanchok district had a diverse range of viewpoints on training, experience, recruiting, appointment types, religion, socioeconomic background, and other themes. I made this selection with a view of having richer information about research topics to cover a wide range of knowledge construction.

## Description of Respondent Participants

The first respondent participant in my study was Sanjiv, a secondary level mathematics teacher in Kavrepalanchok district, Nepal. He completed his B.Sc. from Trichandra Campus and a one-year B. Ed. in major mathematics from Banepa Campus. Later on, he pursued an M. Ed. in Mathematics from Chaitanya Campus.

Jina, another participant, was also a secondary level mathematics teacher. Even though she was born in very remote areas of Kavrepalanchok district, she spent her

childhood mostly in Lalitpur and Bhaktapur districts. She completed her B.Sc. from Bhaktapur Multiple Campus and a one-year B. Ed. in mathematics as a pre-service teacher training from Tribhvan University. Initially, she was interested in studying for M.Sc., but because of her poor economic status, she dropped the intention. Finally, she changed the stream and completed M. A. in development studies from Mid-Western University.

Suman, with almost fifteen years of teaching experience at secondary level, was my third respondent participant. He has completed M.Sc. in Environmental Management from Tribhuvan University and M. Ed. in mathematics from Tahachal Campus. I know that Suman is a highly experienced mathematics teacher who is continuing M. Phil. in Education at Nepal Open University.

The next participant was Indra. He is a secondary level mathematics teacher with almost fifteen years of teaching experience. Indra completed his B. Ed. in mathematics at Chaitanya Campus, Banepa. He clearly knew that without being a regular student in mathematics, it was impossible to pass the M. Ed. in Mathematics. Hence, he pursued his M. Ed. in Educational Planning and Management from Chaitanya Campus, Banepa.

Arpan was my last participant in the study. Arpan started teaching after the completion of BBS degree at Triton International College in Kathmandu. He is perusing MBS degree as his further study. Now he is a secondary school mathematics teacher at an institutional school in Kavrepalanchok.

**Nature and Source of Narrative**

In order to delve further into issues and cover a wide range of topics over a long period, I employed in-depth interview techniques. The interview is a very flexible and common method of gathering field data because it is an inter-subjective process of knowledge production that allows the participant to understand the world in which they live. Guba & Lincon (1981) remarked that it is practically impossible to access inside an individual's experience in their own natural language without face-to-face and verbal engagement. As a result, interviews are a significant source of data for obtaining answers to the research questions. According to Dickinson (2012), the researcher and the researched co-construct their experiences and interpretations of the stories while engaging in meaning-making discourses. The interview is a two-way conversation between individuals impacted by the participants' socioeconomic backgrounds, the course of the contact, and the responses given. As a result, I established a reality of participants based on a shared interpretation of the encounter's distinctive interactional episode. I discovered a range of atypical forms of speaking that represent mathematics teachers' attitudes, methods, and understanding of assessment in the mathematics classroom utilizing narrative stories and interview guidelines.

**Narrating Process**

Through an in-depth interview, I was able to obtain the necessary information from the research participants. I took notes on electronic devices and afterwards saved them on data memory devices. In addition, with the approval of the research participants, I made scheduled visits to collect data. As some of my participants were far from me, I made the visit and stayed in the places for some days as per the need for data. It was often challenging me to get data from my research subjects because my research is entirely focused on the social sciences. For this, I received their previous agreement to the data collection's use, purpose, and relevance. The participant interviews were the primary source for this

study. I performed in-depth interviews with open-ended questions as per the interview guideline. I stayed in touch with and visited the respondent participants until the data was saturated and sufficient for my research.

Each respondent was questioned at least twice and given feedback if necessary. I discovered the teachers' perceptions of mathematics assessment at the secondary level while the responder participants were students in their secondary school lives in the first interview. The second interview allowed me to have a better understanding of their existing math assessment processes in their careers. I planned for each interview to last 1 hour. The time, however, varied depending on how much information and depth each teacher desired to provide about his or her experiences.

Every week, I reported and reflected on the story in conversations with the responding participants. It took approximately two months to complete the process. I made audio recordings of the interviews and then transcribed them to ensure that the interview transcriptions were accurate with respondent participants. For authenticity purposes, I emailed a summary of the interview transcripts to the concerned respondent at the outset of the next interview. Before the second interview, I also gave the respondent participants the summary sheets from the previous interview.

**Handling of Narratives**

On the same day as each interview, I translated the audio recordings in a quiet spot at home. To protect the secrecy of each respondent's response, I accurately transcribed the audio recordings of the interviews. To keep the teacher's voice intact, I transcribed the interviews, laying the focus on the speaker (Christopher, 2017). I recorded teacher discussions for the purpose of anonymity;

the identities of the respondent participants, their institutions, and their addresses are all pseudonyms. As a result, any revealed names may help to protect the anonymity of everyone involved. After transcription, the recordings are stored with sufficient security precautions. After a few days, I went back over the transcriptions to ensure a more individualized interview for each respondent's first and second interviews. I created supplementary inquiry questions for interviewees wherever possible, allowing me to amend, clarify, or add to whatever addressed in the previous session.

Creswell (2009) stated that analysing the qualitative data refers to the process of sense making through the texts and images collected to answer the research questions. This includes the entire process of evaluating and producing insights from raw data. To process the material I gathered through multiple interviews, I employed qualitative methodologies. The triplicate versions of such material that I prepared while transcribing the narrative accounts reduced the chance of missing important primary sources of data and information. I analyzed the textual data using the qualitative analysis process, which includes data/information categorization, topic development by stacking significant themes, reporting findings, and finally qualitative tool interpretation. Then I kept coming up with new ideas for themes based on similar and related codes. I went over the transcribed material and made multiple matrices to help me synthesize and understand the main concepts. During transcription sessions, I used Google translator to translate spoken Nepalese text into English. In addition, I double-checked the accuracy of the translation by rewriting the lines in my diary. Individual respondent participants' verbal identification and explicit interruptions were totally deleted from the

transcriptions.

In summary, to get a better comprehension of the stories I used Aronson's four-stage theme analysis methodology to conduct thematic analysis of the interview transcripts utilizing manual coding approaches (Aronson, 1995 as cited in Dahal, 2017). These initially comprise data collecting in the form of interview transcripts. Second, I identified the direct quotes and paraphrased the shared narratives. In the third stage, I combined related patterns into themes. Then, in the last stage, I established a plausible and logical argument concerning the selection of study topics and the development of a storyline. This stage aids readers in comprehending the research process, motivation, and results. As a result, for the meaning-making process, I focused my thematic analysis on the content and context of a text.

## Data Interpretation

I began the process of making sense of the information I had received by evaluating it. I obtained data from interviews with respondents that were presented as stories because narrative inquiry is a technique for presenting information. I generated patterns regarding mathematics evaluation from the participants' narrative descriptions that were veiled beneath their voices. It helped me to understand and to communicate new ideas (Riessman, 2008 as cited in Dahal, 2017). I made a narration out of spontaneous interviews with responses. Each interview has its own individual aspects based on the feelings expressed in the responses, such as disclosing their feelings towards math evaluation. Themes were created through multiple readings (Josselson & Lieblich, 2009) of the full transcriptions of each interview session making an expert uses of an experience-centred approach (Squire, 2008). I used three guidelines as stated by Squire (2008) for the narrative analysis. From each interview, I developed themes and provided

analytical interpretations. Finally, I used top-down and bottom-up data interpretations to answer the research questions (Dahal, 2017). I made the triangulation among the participants' narration, theories, and the themes on meaning making process.

## Quality Standards

In my research, quality standards are concerned with the quality of the procedures, methods, and approaches used to capture the true essence of respondents' perspectives, data collected, theme development, and conclusions drawn from them in order to make a study credible and its findings acceptable. The terms abound in the qualitative research that speaks to this idea of trustworthiness (Guba & Lincoln, 1985). Maintaining credibility, authenticity, transferability, dependability, and conformability in research can help establish trustworthiness of the study. These are further supported by Korstjens & Moser (2018), as they argued that credibility, transferability, dependability, and conformability are significant quality standards for qualitative research. I maintained the quality standard in my study with much concentration on the following quality standards.

## Authenticity

The quality of the relationship that the researcher has maintained with the participants is referred to as the authenticity of a research study, and it is concerned with fairness, beneficence, and non-munificence, enabling the researcher to explain and provide proof that the data is authentic (Dahal, 2017). I have assured the reader, by establishing authenticity, that this study is genuinely evaluated and implacable in social and educational contexts. As stated by Budhathoki (2017) for authenticity, I also established fairness, educative, catalytic and tactical criteria in the study.

To ensure that the research was fair, I made sure that the respondents had a lot of information to contribute to the purposes of my study. Furthermore, I was wary

about asking questions in interview that would support respondent to share their experiences, perceptions, practices and feeling of assessment. I also concentrated hard on establishing fair relationships and a sense of trust with the participants so that they could freely disclose their true feelings. For these reasons, I managed to interview in a real environment, treating respondents with regard and respecting their self-esteem.

I focused on the exchange of conversational dialogues and cross-questions during the interviews. I did not refer them to follow mine or any others' beliefs and practices. Likewise, I represented their voices and beliefs without any marginalization or misinterpretation. I have kept the verbal and textual data until the publication of this study. To maintain educative catalytic and tactical criteria, I made proper discourse analysis of the information collected and enabled them to do assessment practices. I also informed them of the research findings that benefited them through the study conducted in their local contexts. The study and discussion of the participants' own practices and alternative beliefs will empower them to enhance their pedagogical skills in the course of mathematics assessment at secondary level.

**Trustworthiness**

I confirmed the trustworthiness of the study with accurate interpretation and analysis of the data. It also helped to reduce the possibility of bias during the study design, operation, evaluation, and decision-making phases. Loh (2013) stated that others should not highlight the concern of trustworthiness so extensively in the domain of qualitative research. I conducted the interview using guidelines to broaden my ideas during interviews with research participants.

**Credibility**

There are several methods of establishing credibility in qualitative research; some of which are prolonged immersion in the field, checking interpretation with the participants,

engaging in open-ended or emergent inquiry (Taylor & Medina, 2011). I maintained an adequate relationship with respondent participants and visited them on a regular basis. I performed several interviews to obtain the necessary sources of information and data for interpretation and analysis in order to preserve the credibility of my study.

**Transferability**

The degree of similarities between the researcher and the observers, who will later read the research paper, is transferability. According to Butina (2015), providing comprehensive, rich data was one strategy for boosting transferability. I gave a description of the narratives from the interviews and offered the findings along with supporting evidence in the form of narrative extracts. The research should provide a clear analysis of the context, which the readers can connect to their own social and educational circumstances (Taylor & Medina, 2011). To ensure that my research is transferable, I described the research site and the setting in which the activities take place.

**Dependability**

Dependability in qualitative research is the assurance of finding equivalent results for conducting other research in similar contexts, comparable to the reliability of positivistic researchers (Shenton, 2004). I kept a neutral stance during the interviews, ensuring that my expectations and thoughts about issues in mathematics assessment did not affect the traits and opinions of respondent participants on the issue. I consistently used open-ended questionnaires that would-be guidelines for exploring participants' views, attributes, stories, and experiences. Furthermore, I had also remained cautious that my personal beliefs and dispositions would not affect the research participants.

**Confirmability**

For confirmability, before using the textual material for analysis and conclusion derivation, I performed member checking

on it. I used the same phrases and sentences used by the respondent participants. Later on, I summarized them into short sentences. This check made using the interview summaries helped to construct a truth, capturing the meanings and experiences shared in their stories; to represent their reality as accurately as possible (Goodall, 2008). To increase the probability that teachers would read everything written and to help with potential interview time constraints, I used a summary method. I reminded the respondent participants that they could edit or add to anything before and after they read each summary. There were no changes to the interview summaries made by all the teachers.

**Ethical Consideration**

Dooley (2007) stated that ethics involves the study of right and wrong conduct. The absence of ethical guidelines may challenge the reliability of the research and the conclusions drawn. The data/information obtained during the research is reliable if the readers are convinced of ethical issues and adequate acknowledgement. According to Clandinin & Huber (n. d.), the legal and administrative issues of ethics held by the institutional research committee are followed by narrative inquirers. Nonetheless, because narrative inquiries are relational in nature, ethical considerations are paramount throughout the research. I was always cautious and accountable in each phase of my study in order to preserve ethical standards during my research. Because narrative study inquiry relates to people and society, I was very conscious that participants suffer negative consequences.

I moved forward by taking consent from the research respondents. My supervisor's role in obtaining consent on themes and their interpretation was crucial in moving the research forward. I established strict confidentiality of any information about the respondent participants, and this secrecy led to the ethics of my research. Furthermore, I removed the socio-cultural contexts that may be harmful to the beliefs of certain people and or groups. I used pseudonyms for people represented in this study. In preparing the report, I utilized neutral language or phrases that were not biased against gender, ethnic or racial groups, impairment, or age. Similarly, I acknowledged the literature that I used throughout my research and incorporated in references. Similarly, I cited the literature that I referred to during my study and references were included. I followed the ethical guidelines of Nepal Open University to finalize my study.

**Data Analysis and Interpretations of the Study**

In this section, I make analysis of methodology in the qualitative research. Further, I will make interpretation of the data used in methodology part of the qualitative research.

**Data Analysis**

Data analysis in narrative inquiry involved a process of interpreting and making meaning of the stories collected through various methods such as interviews, observations, and artifacts. The following paragraphs will discuss the key steps involved in data analysis in narrative inquiry.

The first step in data analysis in narrative inquiry was to transcribe the interviews or recordings into text. According to Riessman (2008), transcription involves a detailed and precise representation of the language used by the participants, including their tone, pauses, and nonverbal expressions. This step was crucial because it helped me identify patterns, themes, and meanings in the narratives.

The next step was to immerse myself in the data by reading and rereading the transcripts. This process allowed me to become familiar with the data and developed a sense

of the overall story or narrative. According to Clandinin and Connelly (2000), immersion in the data involves a process of "bracketing" or setting aside preconceived notions to allow the narrative to speak for it. After immersion, I identified themes and patterns in the data. This step involves coding the data, which means marking and categorizing the text according to common themes or concepts. According to Charmaz (2006), coding can be done inductively, which involves identifying patterns and themes that emerge from the data, or deductively, which involves applying preconceived concepts to the data.

In my research, the final step was to analyze the data and synthesize the findings into a coherent narrative that reflects the participants' experiences and perspectives. This step involves writing up the findings in a way that is compelling and engaging to the reader. According to Polkinghorne (2005), a well-crafted narrative should be both coherent and meaningful, capturing the complexity and richness of the participants' experiences.

In conclusion, data analysis in narrative inquiry involves a process of interpreting and making meaning of the stories collected through various methods. The key steps involved in data analysis include transcription, immersion in the data, identification of themes and patterns, and synthesis of findings into a compelling narrative. By following these steps, researchers can gain a deeper understanding of the personal and cultural stories that shape individuals' experiences and identities.

**Data Interpretation**

The process of data interpretation in narrative inquiry involved the identification and analysis of the themes and patterns in the data in my methodology section of the research. According to Clandinin and Connelly (2000), data interpretation in narrative inquiry is an ongoing process that involves moving back and forth between the data and the

emerging interpretations. I used a variety of techniques to interpret the data, such as close reading, memoing, and theoretical sampling. Close reading involved a careful examination of the data to identify the themes and patterns that emerge from the stories. Memoing was another technique where I wrote down their thoughts and reflections on the data as they analyze it. Theoretical sampling involved selecting additional participants to confirm or disconfirm the emerging interpretations.

My role as a researcher in data interpretation was crucial in narrative inquiry. Chase (2005) argued that the researcher must be reflexive and acknowledge the biases and assumptions that may influence the interpretation of the data. The researcher must also be open to new and unexpected interpretations that may emerge from the data. According to Riessman (2008), the researcher must approach the data with a sense of curiosity and openness to allow for the emergence of new themes and patterns.

According to Polkinghorne (2005), theoretical frameworks can help the researcher to identify the underlying assumptions and values that influence the stories and provide a broader understanding of the phenomenon being studied. Data interpretation in narrative inquiry also involved the use of theoretical frameworks to make sense of the data. Theoretical frameworks provided me a lens through which I could interpret the data and understand the broader implications of the stories.

In conclusion, data interpretation in methodology section of my study was a critical component of narrative inquiry. The process of data interpretation involved the identification and analysis of the themes and patterns in the data, using techniques such as close reading, memoing, and theoretical sampling. I played a crucial role in the interpretation process and to

make a reflexive, open-minded, and willing to explore new and unexpected interpretations. Theoretical frameworks also played a role in data interpretation, providing a lens through which I could make sense of the data and understand the broader implications of the stories.

## Discussion

The study was based on interpretive paradigm and narrative research inquiry under qualitative research methodology. I applied narrative inquiry method, which is an iterative process. The paper discussed the philosophical consideration, research paradigm, research design, data collection, nature and source of data, narrative generation, narrative handling, and meaning making of the narratives, quality standards, and ethical consideration as the methodology. The paper captures teachers' experiences through in-depth interviews. All the respondent participants were interviewed separately. I collected information of my participants till the data were saturated. I transcribed recorded texts and made a field notes from this information. I made meaning trough the stories told by respondent teachers and from reflexive ideas of respondent participants thereby generating themes. Then, I analysed and interpreted meanings and generate mathematical knowledge on the basis of participants' views, information of related literatures and my critical reflections. I also described my quality standards and ethical considerations, which I had to take care of as a researcher carrying out a research.

## Conclusions

The paper concludes that methodology on qualitative research focuses on subjective perceptions and concerns of study participants. Methodology provides a baseline and a guiding roadmap. Narrative inquiry is one of the research designs typical of the qualitative methodology that contributes significantly to research while providing researchers with information regarding participants' life experiences . The paper presented the overview of narrative inquiry as a specific qualitative research design, describe its features, identify approaches to gathering relevant information, discuss its benefits, and focus on limitations. This method has been applied in a variety of disciplines to learn more about a people's culture, historical events, identity, and way of life.

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