

CHAPTER III

RESEARCH METHODS

3.1 Research Objects

The research objects of this study are the experiences and insights of professional teachers concerning sustainable lifestyle. These experiences serve as inputs in the identification of pedagogical imperatives for sustainable lifestyle in our classrooms and schools. This research will prioritize a qualitative methodology. According to Yardley (2000) (as cited by Cassel and Symon 2004, 5) has suggested the good characteristics of a qualitative research should demonstrate:

- sensitivity to context – in terms of related theory, epistemological commitments of the research and socio-cultural context of data collection;
- commitment, rigour, transparency and coherence – in terms of researcher engagement with the study, completeness of the data collection and analysis, careful description of the research process and intellectual coherence of the arguments presented through the analysis; and
- impact and importance – in terms of the substance and worth of the work with relation to earlier theory and the specific issue being explored.

3.2 Research Methods Used

This research primarily utilizes the narrative inquiry as a research method. Thinking narratively about pedagogy is a complex undertaking. This complexity, in part, is shaped by understanding that all of the stories are always in the midst (Clandinin & Connelly, 2000 in Huber et al 2013). The choice of this research method stems from the realization across disciplines that the traditional empirical research methods cannot and human centeredness which can be more adequately addressed by narrative inquiry (Webster and Mertova, 2007, 31). The position of narrative inquiry among other methods provides differentiating itself from quantitative measurement approaches and other qualitative methods which points

to understanding human experiences with the attempt to broaden our horizons about a certain phenomenon.

Table 3.1 Qualities of different research methods

<i>Quantitative methods</i>	<i>Qualitative methods</i>	<i>Narrative inquiry</i>
Measurable	Human element	Human experience
Descriptive/ inferential statistics	Logical deduction	Convey/ understand knowledge
Systematic	Content analysis	Critical events
Generalisable	Narrowing	Broadening
Large numbers	Small numbers	Small numbers

(Lifted from Webster and Mertova)

Further elaboration of the value of narrative inquiry for this research is its innate connectivity with education and pedagogy, which is the goal of the research. Narrative inquiry becomes essential because of its educational significance:

“...in the context of research, what makes them noteworthy is their educational value. Unlike many of the stories we meet elsewhere, those we read and hear in the teaching and learning context are usually intended to help us learn – either directly about the subject matter of instruction or, alternatively, about the strengths or shortcomings of the teaching itself. This fundamental link of narrative with teaching and learning as human activities directly points to its value as an educational research tool. However, the value of narrative is not only restricted to research on teaching and learning – it can be valuable to research in a wide range of other areas, such as medicine, science, economics, politics and law” (Webster and Mertova, 2007, 15).

This research explores the lived experiences of professional teachers who are enthusiasts of sustainable lifestyle. Critical events, which are also key events, will

be utilized as an approach to determine the turning points in the teacher's life which prompted them to pursue sustainable lifestyles. These events are 'critical' due to their impact and profound effect on the story teller. They often bring about radical change in the person. These events highlight issues of complexity of the human experience. Webster and Mertova state that: *Narrative is an event-driven tool of research. The identification of key events, and the details surrounding these, are recognized forces in adequately describing the matter under research.... An event-driven approach to research is also a mechanism for dealing with large amount of data* (71). Likewise, critical events can only be viewed in retrospect and could be elicited with the use of conscious mapping of narratives.

The Qualitative Data Collection for this study may include Focus Group Discussion, Interviews, and Personal Narratives. While the Qualitative Data Analysis are Coding, Content Analysis, Narrative Analysis, and Thematic Analysis.

3.3 Sources and Techniques of Data Collection

Techniques associated with narrative inquiry and critical events approach are used in the study research. This paper derives a pedagogy which emanates from real life practice. It is a qualitative study which draws upon life history and narrative methodologies as methods appropriate for investigating the cognitive and empirical practice of a sustainable lifestyle educator. To generate information and collect data, the use of tools such as biographical survey, observations, interviews, documentation, and transcriptions will be employed. Materials or instrument such as a semi-structured interviews questionnaire will be validated by experts. Permission were solicited from respondents as to data that were generated from participant observation, diaries, and personal views regarding a topic or official documents essential to the study. Interview and/or focus group discussions (FGD) were part of eliciting data on life stories and critical events.

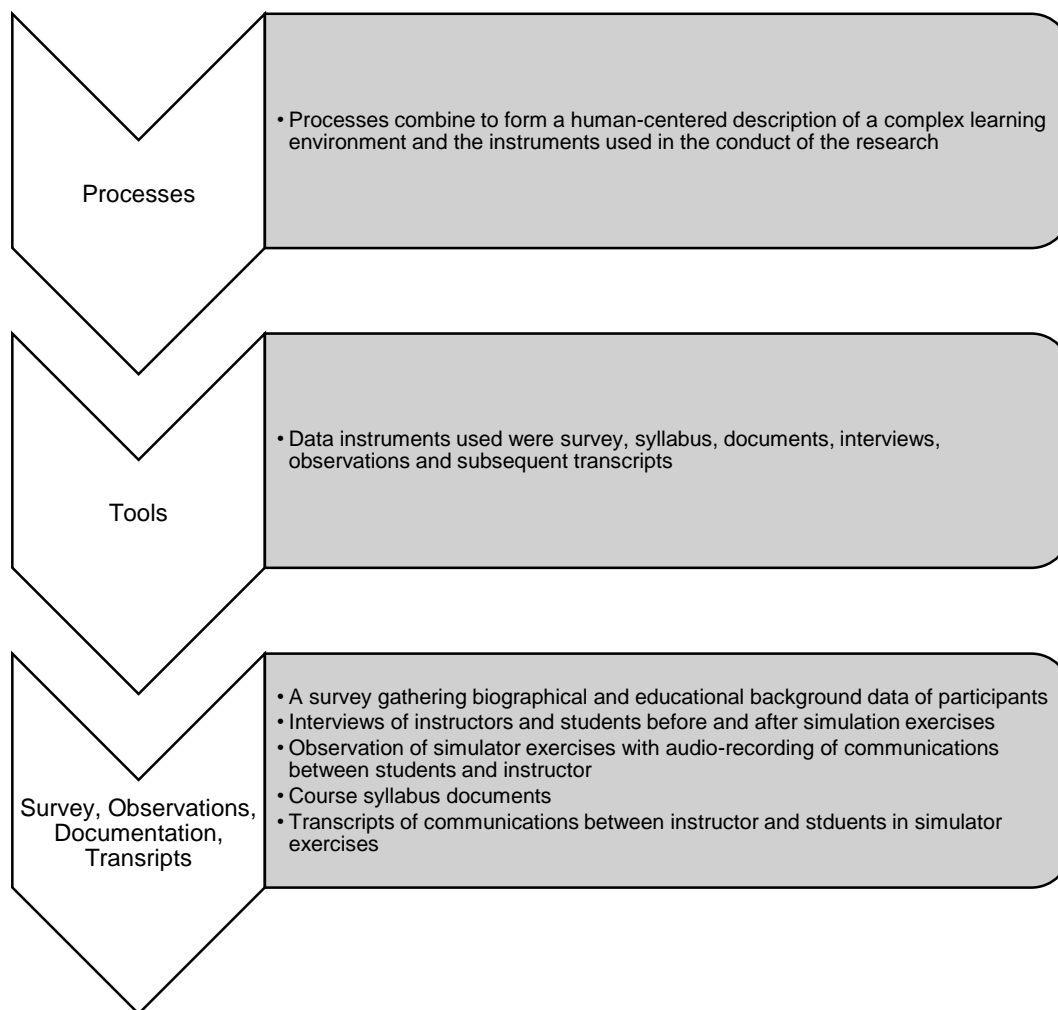


Figure 3.1 A hypothetical research project outline – process: tools

(Lifted from Webster and Mertova)

Coupled with narrative inquiry is the use of introspective technique as a source of interpretive materials. Introspective technique permits the researcher to ‘prompt and collect people’s stories about the lived details of socially constructed experience (Ellis, 1991, 45). Using interactive introspection ‘the researcher works back and forth with others to assist in their [respondents] introspection, while the object of the study is the emergent experiences of both parties’ (Ellis, 1991, 30). Interactive introspection resembles an intensive interview, it is more interactive. Here, the researcher and subject work as equal participants and concentrate directly on emotional process (Smith 1979; Stacey and Thorne 1985 as cited by Ellis, 1991, 30).

The objective in collecting data for this study was to obtain data from licensed professional teachers living a sustainable lifestyle within the urban Metropolitan Manila. Personal descriptions and narratives provided by lifestyle practitioners were used to identify common characteristics of practitioners and also to understand their personal values and attitudes. A "biographical method" to collect our data was adopted for this study:

Biographical contexts can be analysed as data on a time frame. Contrary to research on attitudes and opinions, biographical research can better examine the process of social life because data includes the 'whole story', as it began, what happened afterwards and which things have developed since; the lapse can be analysed (at least from the narrator's perspective) (Fuchs-Heinritz, 1998, p. 7).

Furthermore, the merits of a biographical method balances objectivity and subjectivity. The interpretation of a life event is tempered by both internal reflection and outer context.

“(b)iological information can be obtained that exceeds the objective data of the course of life, because personal and individual differences in the interpretations of events can be registered. With this approach, personal attributions of life events can be a topic, so that the subjective shaping power and interpretations become the center of attention. Not only external variables (for example: the parents' house) determine the development of a human-being and his or her individuality, but also the individual processes of these circumstances (Opitz 1998). 128-129.

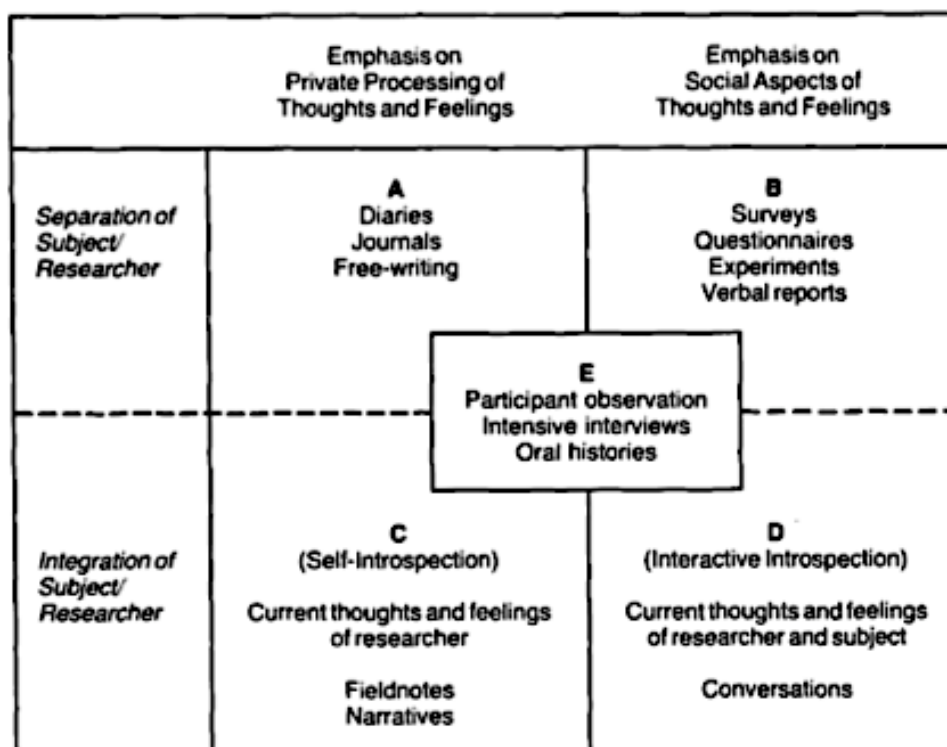


Figure 3.2 Sources and Methods of Interpretation

(Lifted from Ellis, 1991, 31)

3.4 Respondents

The study targets professional teachers who are engaged in the practice of ‘sustainable lifestyle’. The participants are volunteers who consented to be interviewed and participate in the said research. Because the study aims to identify themes and transformational points in the life of the educator, various characteristics should be met. Hence, the respondents should have the following qualifications:

- Professional teacher (regardless of specialization)
- Practitioner of sustainable lifestyle
- Willing to share personal experiences

The participants of this research were determined using the snow-balling technique. Given the difficulty in determining participant-respondents due to the

novelty of ‘sustainable lifestyle’, the research used the snowball or chair referral sampling technique to gather respondents. Snowball or chain referral sampling is a method that has been widely used in qualitative sociological research. The method yields a study sample through referrals made among people who share or know of others who possess some characteristics that are of research interest (Biernacki and Waldorf, 1981, 141).

The participants also carry with them the ‘concept of responsibility’ or people who act according to their own values and moral categories in the areas of ecological, social, and economic sustainable development (Degenhardt, 129). Three components consist the concept of responsibility: Power of imagination, conviction of effectiveness, and engagement (cited by Degenhardt, lifted from Weinrich-Haste 1996). The participant also exemplifies ‘retinity,’ a term created by the German Environmental Advisory Council highlighting the interrelatedness of the three-sphere essential to sustainable lifestyle. *Retinity* demands that all relevant decisions have to account for the interrelatedness of economy, ecology, and the social sphere (Barkmann et al, 320).

Table 3.2 Components of Concept of Responsibility

<i>Components</i>	<i>Description</i>
Power of imagination	State that moral problems exist
Conviction of effectiveness	Dimension to act responsibly (conviction to act effectively) and knowledge (how to act)
Engagement	Practical extension of the conviction of effectiveness in the acting level

(cited by Degenhardt, lifted from Weinrich-Haste 1996)

The respondents who consented were asked to sign the informed consent form and were given proper orientation and explanation on the content and goals of the research as well as the scope and limitation of their participation into the study.

3.5 Data Analysis Techniques

This part will use content analysis method in examining responses from the questionnaire and the focus-group discussion (FGD). The data yielded from the instrument will be thematize through common qualitative practice of coding to attach relevant labels. Responses will be coded, analyzed and emerging themes will be extracted from the data. Frequent responses as well as salient themes in the responses to the questionnaire will be coded. Codes will be collapsed into themes with common ideas.

Thematic analysis is the process of identifying patterns or themes within qualitative data. The goal of a thematic analysis is to identify themes, *i.e.* patterns in the data that are important or interesting, and use these themes to address the research or say something about an issue (Maguire & Delahunt, 2007, 3352-3353). Braun and Clarke (2006) provided a six phase analysis which includes are not necessarily linear but essential in the analysis of complex data. In presenting the analysis, a case-centered analysis with the aim of developing a model from the case is pursued. This process of emergent thematic analysis, which they refer to as bracketing, allows ‘for seeing the text from a phenomenological perspective without predefining participants’ experiences in terms of the interpretative framework” ’ (Thompson et al., 1990: 347). The categories of teachers’ answers and pedagogical manifestations will be constructed on the basis of teachers’ own responses guided by behavioral standards on sustainable lifestyle. Pedagogical imperatives are categories which emanated on teachers’ practices and responses.

A number of concepts, as many as possible, are generated with open coding by summing the data through awarding abstracted terms. With axial coding, the found categories are related with each other by a code paradigm, while the "core

categories" are identified with selective coding. The evaluation process was not a linear process where the code steps follow strictly one after another.

Table 3.3 Phases of Thematic Analysis

<i>Phase</i>	<i>Description of the process</i>
1. Familiarising yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and name for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature,

producing a scholarly report of the analysis.

(Lifted from Braun and Clarke, 2006, 35)

Table 3.4 A 15-point Checklist of Criteria for Good Thematic Analysis

<i>Process</i>	<i>No.</i>	<i>Criteria</i>
Transcription	1	The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for ‘accuracy’.
Coding	2	Each data item has been given equal attention in the coding process.
	3	Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive.
	4	All relevant extracts for all each theme have been collated.
	5	Themes have been checked against each other and back to the original data set.
	6	Themes are internally coherent, consistent, and distinctive.
Analysis	7	Data have been analyzed – interpreted, made sense of – rather than just paraphrased or described.
	8	Analysis and data match each other – the extracts illustrate the analytic claims.
	9	Analysis tells a convincing and well-organized story about the data and topic.
	10	A good balance between analytic narrative and illustrative extracts is provided.

Overall	11	Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once-over-lightly.
Written report	12	The assumptions about, and specific approach to, thematic analysis are clearly explicated.
	13	There is a good fit between what you claim you do, and what you show you have done – i.e., described method and reported analysis are consistent.
	14	The language and concepts used in the report are consistent with the epistemological position of the analysis.
	15	The researcher is positioned as <i>active</i> in the research process; themes do not just ‘emerge’.

(Lifted from Braun and Clarke, 2006, 36)

Generally, the research followed the steps from Preparation of Instruments to identification of Pedagogical Imperatives.

Table 3.5 Preparation of Instruments for the Identification of Pedagogical Imperatives

<i>Phase</i>	<i>Activity</i>	<i>Description</i>	<i>Method</i>
1	Preparation of Instruments	Construction and validation of questionnaires	Consultation
2	Gathering lived experience and narratives	Data gathering through qualitative methods	Interview/ FGD
3	Transcribing the interview/focus group discussion	Carefully encoding the results of the interview	Transcription

4	Generating textual themes from the narratives and structural themes	Identification of pedagogical elements and transformative themes	Qualitative analysis, coding, theme-building
5	Identifying pedagogy imperatives	Identifying pedagogical imperatives	Validation

3.6 Preparation of Instruments

Construction and validation of a questionnaire was developed to help in the conduct of the study. The researcher felt that it is deemed necessary to come up with a questionnaire to serve as a basis of understanding behavioral components of sustainable living. Key behaviors for a Sustainable Lifestyle (lifted from *Sustainable Lifestyles: Today's Facts & Tomorrow's Trends* [2012]) served as a guide to identify widely perceived practices of sustainability. It has nine headline behaviors with particular sub-behaviors.

Table 3.6. Head Behaviors with sub-behaviors

Head Behaviors	Sub-behaviors
1. Eco-improving homes	<ul style="list-style-type: none"> a. Insulating your home b. Upgrading heating and hot water systems c. Fitting and using water saving devices d. Generating own energy by installing renewables
2. Using energy and water wisely	<ul style="list-style-type: none"> a. Managing temperature b. Washing and drying laundry using minimum energy and water
3. Extending the life of things (to minimize waste)	<ul style="list-style-type: none"> a. Maintaining and repairing (instead of replacing) b. Giving new life to unwanted items (e.g. furniture) c. Making the most kerbside and local recycling services

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|--|---|
| 4. Cooking and managing sustainable lifestyle and healthier diet | <ul style="list-style-type: none"> a. Choosing foods grown in season (in country of origin) b. Increasing proportion of vegetables, fruit, and grains in diet (eating a balanced diet) c. Cooking sustainable and healthier food d. Wasting less food e. Growing your own food |
| 5. Choosing/consuming eco-products and services | <ul style="list-style-type: none"> a. Using labelling to choose most energy and water efficient products b. Choosing fairly traded, eco-labelled and independently certified food, clothing, etc. c. Borrowing, hiring or sourcing second-hand or recycled d. Buying ethically when travelling |
| 6. Travelling sustainably | <ul style="list-style-type: none"> a. Making the most of cycling, walking, public transport and car sharing for short journeys b. When buying or replacing a vehicle, take advantage of lower-emission models available c. Making the most of alternatives to travel e.g. video conferencing d. Making the most of lower-carbon alternatives to flying (e.g. trains) e. Driving more efficiently |
| 7. Setting up and using resources in the community | <ul style="list-style-type: none"> a. Setting up a car share and using car clubs b. Installing community micro-generation c. Sharing knowledge, skills, etc. |
| 8. Using and future-proofing outdoor spaces | <ul style="list-style-type: none"> a. Gardening for biodiversity and environment b. Enjoying the outdoors |
| 9. Being part of improving the environment | <ul style="list-style-type: none"> a. Volunteering (with a local or national group) b. Getting involved in local decisions |
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The instrument has three parts – respondent’s profile, key behaviors for Sustainable Lifestyle, and Interview Questions. Likewise, to secure the ethical considerations of the research, a *Consent to Participate* form was incorporated in the instrument and was accomplished by the respondents. The contents of this form was explained to the respondents and proper arrangements were made. The Consent Form includes an Introduction, Purpose of the Study, Description of the Study Procedures, Risks/Discomforts of Being in the Study, Confidentiality, Right to refuse or withdraw, Right to ask questions and report concerns, and Consent (see *Consent to Participate in a Research Study*).

3.7 Survey Instrument Validation

A survey instrument (*A Survey on Key Behaviors for a Sustainable Lifestyle*) was made to facilitate data collection on the sustainable lifestyle habits of the respondent. Likewise, a set of interview questions is also included in the document. This instrument was validated by experts and sustainable lifestyle practitioners/enthusiasts. The validators are described as an awardee and low impact lifestyle advocate from a provincial city; an advocate and officer from the Environmental Management Bureau- DENR; a sustainable lifestyle practitioner from the National Center for Teacher Education; an environmental scholar and advocate from an environment and green technology education hub of a teacher education institution.

3.8 Gathering lived experience and narratives

To be able to gather lived experience and narratives, the researcher sought the assistance of various individuals to identify ‘professional teachers who are sustainable lifestyle practitioners in Metropolitan Manila. Key personnel were requested to provide the over-all situation for possible respondents. Unfortunately, due to the highly selective nature of the respondents, no substantial lead was

provided. Likewise, utilizing the power of social media, the researcher joined Sustainable Lifestyle groups hoping to encounter professional teachers on-line. There are people on social media who claims to practice sustainability, however most do not belong to the teaching profession.



Figure 3.3 Publication Material for the Call for Respondents

One resort is to utilize the ‘snow ball technique’ wherein individuals refer to the respondent people who has the characteristics needed. Fortunately, the research has been able to gather individuals who fit into the following criteria: licensed professional teacher from Metro Manila, sustainable lifestyle practitioner, and is willing to participate in a study about Sustainable Lifestyle.

The respondents were asked to provide inputs and insights on the survey instrument. Likewise, interviews and personal communications were transmitted to be able to probe the respondents. Observing patterns of thinking on sustainable lifestyle was facilitated through probing social media postings. An FGD was also conducted to verify and level common understanding and practices on sustainable lifestyle.

3.9 Transcribing the interview/focus group discussion

After gathering substantial data, transcribing the interview and focus group discussion were executed. In these oral discussions, the researcher followed the basic tenets of transcribing the materials. Proper ethical considerations are always in place to ensure a sound and honest handling of data.

3.10 Generating textual themes from the narratives and structural themes

Textual and structural themes from the narratives are examined based on the responses from the questionnaire, interviews, and the focus-group discussion (FGD). The data yielded from various qualitative techniques are thematize using the common qualitative practice of coding. By doing so, relevant labels are generated. Common/frequent ideas and responses are assigned with codes and are collapsed under a common category. Identifying patterns or themes within qualitative data is an essential part of this research phase.

3.11 Identifying pedagogical imperatives

The most essential part is to come up with statements that could be considered as *Pedagogical Imperatives on Sustainable Lifestyle*, or necessary conditions to effectively teach sustainable lifestyle in our schools. The goal of identify these ‘imperatives’ is to address pedagogical gap of theory and practice as an issue in the school set-up in Metro Manila. These statements are validated upon the consensus of practitioners, experts, and teachers.

These pedagogical imperatives are then presented to teachers, who are not practitioners, for possible insights on the practicability of these statements in a school set-up. Likewise, recommendations to local government leaders might provide opportunities in the expansion of these statements outside the school environment.

