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A Plea for a Focus on the Contrasts between Two Paradigms and Their Implications for Problem Statement

Mohammed BOUKEZZOULA
Department of English, Faculty of Letters and Languages
Mohammed Seddik Ben yahiaUniversity, Jijel, Algeria

Abstract
To adequately tackle a research problem, master students of applied linguistics should learn that the selection of (a) data elicitation technique (s) should be made in consistence with choices at three other levels: method, methodology and paradigm. Hence, this paper addresses the following question: how should the methodology course be reformulated to render it more efficient in raising students' awareness of this issue? An analysis of some research methods manuals currently in use reveals that two major obstacles hinder students 'ability to learn this issue: the pluralistic nature of applied linguistics and the rampant use of mixed methodologies. To overcome these obstacles, this paper proposes a teaching strategy consisting of focusing the initial phase on a contrastive analysis of two methods, which stand at extreme positions on the methodological continuum in applied linguistics, namely, experimental design and ethnography. Moreover, given that the presentation of the differences between these two methods is not sufficient, the paper argues that this presentation should be reinforced by a foregrounding of the essential differences in problem statement in the two research traditions in question. The paper concludes with some recommendations on the appropriate way to implement the proposed teaching strategy.
Keywords: applied linguistics, ethnography, experimental design, Research methods, problem statement

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Introduction

The Master's level research methodology course in applied linguistics aims at enabling apprentice researchers to understand, appraise, and conduct research to be able, eventually, to contribute to their field of specialization. However, in spite of receiving instruction in this domain for three semesters, Master students in applied linguistics in the Algerian context are often caught picking up hastily and haphazardly data elicitation techniques to tackle a research problem with no, or only scant, regard to the philosophical underpinnings of their choices. This abnormal, recurring practice puts into question the effectiveness of the methodology course currently in use in equipping the students with the necessary knowledge and skills for an adequate tackling of research problems. A great deal of improvisation, which characterizes the design and teaching of this course, stands without doubt as a significant hindrance to the development of students' research competence. However, a consideration of the pluralistic nature of the discipline itself as well as a close examination of the research methods manuals currently in use (for example, Dornei (2007); Nunan (1992); Paltridge and Starfield (2007); Sunderland (2010)) bear evidence to suggest that the phenomenon of apprentice researchers use of data elicitation techniques without consideration of their philosophical underpinnings is not specific to the Algerian context, but rather universal.

Acquiring an adequate mastery of research methodology in applied linguistics involves much more than making an arbitrary choice of data elicitation techniques (such as a questionnaire or interview), collecting data, analyzing it and writing a conclusion. "An understanding of appropriate techniques as well as their limitations" is a critical requirement of Master research as indicated by Paltridge and Starfield (2007, p. 56). A judicious assessment of the advantages and limitations of any data elicitation technique, however, depends on students' ability to make consistent choices at four levels: data collection technique, method, methodology, and paradigm (Halfpenny, 1981). Before submerging them in the nuts and bolts of data collection and analysis, the effective training of Master students in applied linguistics as successful methodologists depends primarily on raising their awareness of a critical principle: these four levels are interconnected and, therefore, should not be dichotomized. That is to say, Master students should learn that the choice of one or more data collection techniques is made based on its coherence with the procedural framework of an established method, which in turn should be consistent with a methodology, and therefore, in harmony with an established paradigm. As Jorgensen and Philips (2002, p. 4) so aptly and succinctly put it, "each approach [to research] …is not just a method for [data collection and] analysis, but a theoretical and methodological whole-a complete package."

To ensure Master students' grasp of this crucial principle, the research methodology course should focus on the contrasts between two methods, which stand at extreme positions on the methods continuum in applied linguistics, namely, experimental design and ethnography. Pederson's (2006, p. 192) demonstrated "the continued dominance 'in recent applied linguistic literature of the two paradigms to which the selected methods correspond, which provides additional support for the proposed solution. Learning this critical principle provides apprentice researchers with the necessary background to learn easily other less common methods. Moreover, the ability to use this principle enables students to eventually embark on the creative process of designing and using the mixed methods relevant to their research endeavors.

Moreover, learning to problematize a research issue is a highly challenging task for novice researchers. The statement of the problem, according to Porte (2002), enables the reader to evaluate the relevance and the ensuing arguments of the research issue. However, some research methods manuals in applied linguistics present the statement of the problem in a monolithic fashion, which blurs the defining differences between the different models and adds to students confusions. As a matter of fact, the contrasts between the two paradigms result in two different processes of scientific argumentation (Chevrier, 2003). The processes of argumentation reflecting the inherent principles of each paradigm should be demonstrated, first and foremost, in the statement of the problem. Hence, to enhance students' grasp of the necessity to establish a logical link among the levels of paradigm, methodology and method when selecting (a) data elicitation technique (s), these differences should be highlight in the research methods course.

In light of the above, this paper seeks to answer the following questions:

1. What is the nature of the relationship between paradigm, methodology, method, and elicitation technique in academic research?
2. What are the contrasts between experiment and ethnography at different levels?
3. What are the implications of these contrasts on problem statement?

Applied Linguistics as a Pluralistic Discipline

The first challenge that faces the teacher of research methodology embarking on the design of his course emanates from the field of specialization itself. Applied linguistics is a pluralistic discipline that draws from an ever-growing number of feeder disciplines to "address […] language-based problems in real-world contexts" Grabe (2002, p. 10) (as cited in Al Alami 2015, p. 1330). This pluralistic discipline comprises an ever-increasing number of loosely assembled subfields like language teaching methodology, syllabus and materials design, language testing, language for specific purposes, second language acquisition, language policy and planning, forensic linguistics, sociolinguistics and Critical Discourse Analysis, translation studies and lexicography" (Groom and Littlemore, 2011, p. 28). Whenever a new subfield enters its domain, the discipline faces the challenge of redefining itself and, more importantly, of integrating new methodological tools. Thus, while the presentation of a comprehensive survey of existing methods in applied linguistics is far beyond the scope of any methodology course, any attempt to familiarize students with the maximum number possible of methods results but in a shallow understanding of these methods. Such a superficial treatment of a large number of methods and data collection techniques induces students to use them haphazardly and, therefore, deprives them of any chance to reach a sound interpretation of their research results.

Research Methods Manuals in Applied Linguistics

The second challenge emanates from the manuals that serve as the source for the design of the research methods course. Although an abundance of research methods manuals are nowadays available to both teachers and students (for example, Dornei (2007), Paltridge and Starfied (2007), Sunderland (2010), an examination of the content of these manuals demonstrates that these manuals are apparently more concerned with the presentation of a survey of the prevalent research strategies and data collection techniques than with training apprentice researchers to design interpretable research through establishing the necessary connection between data collection techniques and their underlying research philosophies and approaches. Most often than not, the

writers of these manuals argue that providing novice researchers with more procedural knowledge in research methods is far more rewarding than wasting time in the presentation and discussion of the philosophical controversies that nurtured over the years the paradigm wars in the social sciences (Dornei, 2007). For example, Dornei (2007) maintains that

> "I cannot relate well to research texts that are too heavy on discussing the philosophical underpinnings of research methodology… I get easily disoriented in the midst of [sic]discussing research at such an abstract level, and often find myself thinking; can't we just [sic]get on with it …?" (p.18)

As a result of this anomalous practice, the teachers and students who rely on these manuals fall easy prey to the same practice to the detriment of the internal validity of research conceived this way.

The Challenge of Eclecticism and Mixed Methodology

Nevertheless, our proposed teaching strategy might be criticized for two reasons: 1. represents a purists' point of view, and 2. mixed methods might justify the rampant dichotomizing practices between data collection techniques and their philosophical underpinnings denounced above. Mixed methods or eclecticism, however, should not be considered as an easy way out because it is, arguably, more demanding and more time consuming than the purists' stance because the resort to mixed methods does not justify an unrestricted use of some data collection techniques to solve a problem.

Regarding mixed methods, a distinction is made between two types: unprincipled eclecticism and principled eclecticism. As far as this thorny issue is concerned, Jorgensen and Philips (2002) set a highly pertinent distinction between multi-perspectival work, an informed choice of different perspectives to obtain distinctive forms of knowledge on a given phenomenon, and unrestricted eclecticism-a mere jumbling of different approaches/methods without any reflection on drawing a logical relationship between them, on the other. As far as this distinction is concerned, Jorgensen and Philips (2002) remark that 'multiperspectivalism'[sic] requires that one weighs the methods up against each other, identifying what kind of (local) knowledge each approach can supply, and modifying the approaches in the light of these considerations. Accordingly, Jorgensen and Philips (2002, p. 4) recommend that "to construct a coherent framework, it is crucial to be aware of the philosophical, theoretical and methodological differences and similarities among the approaches." In the same vein, Denzin and Lincoln (2000) coined the term 'bricolage' to refer to a researcher's ability to develop a freshly new and more adequate interdisciplinary approach, based on a harmonious synergy of existing approaches, to approach a research problem. Denzin and Lincoln (2000) point out that this creative task is highly demanding in that it requires a broad knowledge of research strategies.

Based on the inadequacy of the traditional methods to reach a satisfying answer to the research question, a researcher can justify the use of mixed methods. However, to use principled mixed methods, the researcher should display a thorough knowledge of the merits and demerits of existing paradigms. Therefore, the use of mixed methods is highly demanding and far beyond the reach of apprentice researchers who are still struggling with the first principles.

Hence, to be able to develop and use a multiple perspective approach to answer a complex research question, when necessary, novice researchers should, first and foremost, display a mastery of the fundamentals of the most conventional approaches.

Academic Research: Some Key Concepts

Before dealing with the contrast between the two methods in question, it is necessary to introduce some basic concepts that constitute a pre-requisite for students 'understanding of the scientific method.

Inductive vs. Deductive Reasoning

In Seventeenth-century western Europe, as result of the crisis in faith that ensued the decline of the catholic church's authority over the lives of its subjects, some prominent philosophers attempted to provide more credible answers to basic human questions about faith and being; answers that are based on reason rather than on controversial interpretations of the sacred texts. In their attempt to live up to the challenge that they have set for themselves, these philosophers felt the need to broaden the perspective of philosophy itself. Until then, philosophy encompassed two traditional branches: ontology, concerned with the nature of existence, and ethics, concerned with issues of morality. However, René Descartes, a significant figure of this movement, fathered a third branch in philosophy-epistemology, "concerned with the nature, sources and justification of the major kinds of knowledge" Tavakoli (2012, p. 191). During the same period, the Cartesian revolutionary ideas sparked a hot debate between two major schools of thought, the rationalists and the empiricists, about the nature and the origin of human knowledge. This debate has resulted in the maturation of two alternative modes of scientific reasoning: inductivism and deductivism. The former consists of observing and studying single instances to infer general laws that account for all similar cases, whereas the latter consists in the formulation of a general question, the proposition of a tentative answer to this question, and, finally, the empirical verification of the adequacy of the proposed hypothesis.

The most significant breakthrough in the scientific study of the universal laws governing natural phenomena that have been made in the same era was only possible thanks to the development of the actions of the scientific method developed by the empiricists. The actions of this method have remained roughly unchanged since that era. The process of the formulation and testing of scientific hypotheses, however, witnessed a significant shift from inductivism to deductivism. This shift occurred thanks to the ideas of Karl Popper (1902-1994). Popper (as cited in Nunan, 1992) justifies his dismissal of the adequacy of the generalizations formulated by inductivists on the basis that these generalizations are biased towards illogical confirmations because their formulation takes into account only a limited number of the possible cases constituting a given phenomenon. Instead, Popper (as cited in Nunan 1992, p. 15) proposes the adoption of an inductive procedure geared towards the testing of hypotheses that are formulated in such a way that allows their falsification using one and only one disconfirming instance. Notwithstanding, Al Alami's (2015, p. 1330) assertion that "anything … [applied linguists] claim to be true should be falsifiable", following the falsificationists' principle, is only partially valid: this principle applies only to the hypotheses emanating from the experimental/analytical paradigm.

As a result of its impressive effectiveness in the study of natural phenomena in the hard sciences, the human and social sciences adopted the scientific method. The study of problems in the social sciences following the experimental method, according to Hunt and Colander (1984, p. 14), follows roughly the following steps: "[sic] 1. Observe; 2. Define the problem; 3. Review the literature; 4. Observe some more; 5. Develop a theoretical framework and formulate a hypothesis; 6. Choose the research design; 7. Collect the necessary data;8. Analyze the results; and finally, 9. Draw conclusions."

Finally, despite its extensive use, however, this procedure, that has aspired to reincarnate the principles and the steps of the standards method in the hard sciences, represents only one of the alternatives available to researchers in the social sciences, in general, and applied linguistics, in particular.

Paradigm, Methodology, and Method

According to Hatch and Farhady (1982) (as cited in Al Alami 2015, p. 1331), academic research encompasses three essential elements: "questions, systematic approach, and answers". These three elements are interrelated: to reach relevant answers to research questions, researchers should adopt a systematic approach in the design of their studies, and the collection, analysis, and interpretation of the data. To be systematic in approaching a research issue, students should learn to establish the connection between three key concepts: paradigm, methodology, and method.

LeCompte and Schensul (2010, p. 55) defines a paradigm as "…a framework for interpretation or a way of viewing the world", whereas Tavakoli (2012, p. 443) defines it as " … a disciplinary matrix-commitments, beliefs, values, methods, outlooks, and so forth across a discipline." It follows, then, that a paradigm is a proposition or a set of propositions that are held and shared by members of an academic area of study to be self-evident about the nature of truth and scientific knowledge in their discipline. This philosophical stance lays at the foundation of any choice made by these members regarding the methodological tools, strategies, and techniques used to tackle the research issues that form the object of inquiry within their discipline. These propositions or axioms belong to two interrelated philosophical branches: ontology and epistemology. The former involves beliefs about the nature of reality, and the latter involves assumptions about the way (s) of reaching knowledge about reality; however, assumptions about the nature of reality also determine assumptions about the most effective way of reaching the truth about this reality. Only a consideration of the paradigmatic stance or theoretical framework adopted by members of a particular scientific community can reveal the strengths and the weaknesses of the different methods and data collection techniques. In applied linguistics, a paradigm generally involves conceptions about the nature of language, language learning/teaching, and the role of the language learner/teacher. Applied linguists operate with several paradigms like positivism, interpretivism, behaviorism, constructivism, and postmodernism.

In harmony with the ontological and epistemological allegations of the paradigm adopted by members of an academic area of study, methodology sets goals for research and prescribes strategies to achieve them. In other words, following the claims set by a paradigm, methodology defines the relationship between the researcher and his research. This relationship is expressed in terms of a set of prescriptions about the way to obtain knowledge about a phenomenon. The

researcher's primary concern in the selection of the methodology is to select the right or correct procedure (s) that are conducive to truth about the reality of a particular phenomenon; the 'self-evident' views about the nature of being or reality stipulated by the paradigm determine the degree of adequacy of a particular procedure. As Blessinger (2015) puts it,

> "A methodology is a system of established and peer-accepted strategies and methods for conducting research, along with their associated theories, principles, and rules, which are commonly defined by and used within the respective discipline/field by peer-recognized experts within that discipline/field."

A methodology is, then, a practical, coherent framework developed based on the assumptions about reality, scientific truth and the way to reach this truth stipulated by a particular paradigm. This framework governs the choice of a method. Quantitative and qualitative methodologies represent the most fundamental distinctions in applied linguistic research; the experimental method falls within the scope of the former, and ethnography belongs to the latter.

Last but not least, the method refers to '…techniques that are used to gather evidence and conduct research (surveys, interviews, experiments) to solve problems' (Reddy, 2017). Schweizer (1998), however, defines it as the procedure for obtaining knowledge about a phenomenon. Schweizer's (1998) definition is more adequate because it places value on the need for the specification of a method to involve a series of rationally sequenced steps to getting evidence about the phenomenon understudy. The sequencing of these steps follows a chosen methodology dictated by the ontological and epistemological positions of a particular paradigm.

Therefore, the selection of a paradigm guides the choice of methodology, which, in turn, guides the decision about the method or methods of data collection. Hence, it is necessary to take into consideration all the aspect when selecting and evaluating the advantages and disadvantages of different data collection techniques.

The remaining part of the paper consists of two halves. The first half contrasts the methods in question, while the second half outlines the implications of these contrasts to statement of the problem.

The Contrasts between the Experimental Method and Ethnography

The Empirical Analytical Paradigm

The scientific study social and human phenomena consist, according to Popkewiz (1984), in breaking instances of human behavior into their constituting elements. These elements which are accessible to empirical observation and analysis allow the discovery of universal laws governing the phenomena understudy. Observing these laws render the phenomenon understudy describable, predictable, and, thus, controllable. Pokewiz (1984) identifies five interrelated central assumptions that lay at the foundation of this paradigm. First, a scientific law or theory is universal and, thus, applies equally to all contexts. Second, a theory is analytical and not normative: scientific inquiry should seek to reach definitive conclusions about the internal mechanisms governing a given phenomenon. To be valid, these conclusions should not involve any subjective consideration. Third, any social phenomenon is made up of a set of interacting variables. Each of these variables can be studied separately to determine the role that the variable in question plays

in the cause and effect relationship. The study of the cause and effect relationship between variables is the objective of scientific inquiry; only an accurate scientific expression of the cause and effect relationship between the set of variables constituting a phenomenon is susceptible to subject this phenomenon to predictability and manipulation. The study of causality consists of identifying which among the set of variables understudy form the cause, and which form the effect. The former are called independent variables, and the latter are called dependent variables. Fourth, the starting point for scientific a priori reasoning should be the operational definition of the variables; the aim of an operational definition is to make a scientific inquiry manageable and, therefore, doable. To achieve this aim, an adequate operational definition transforms the abstract traits that stand at the background of social and human phenomena into observable and measurable behaviors. Fifth, to make the extrapolation of causality law to all similar contexts possible, the cause and effect relationship between the quantifiable variables is expressed in terms of mathematical equations.

Quantitative Methodology

The quantitative methodology provides the practical framework for the application for the principles stipulated by the empirical/analytical paradigm. This methodology breaks learners' language proficiency into set variables to test the cause and effect relationships that might exist between them. These variables include language methods, materials, teaching styles as well as the components of learners 'language proficiency. Based on the assumption that reality is objective, stable, and external to the researcher laid by the paradigm in question, this methodology seeks to devise research designs that would allow the objective verification of hypotheses. These hypotheses are tested under tightly controlled conditions, and using standardized, valid, and reliable measurements. Controlled measurements and inferential statistics are the tools whereby this methodology turns research results into causality laws that are, supposedly, applicable to all similar contexts.

The Experimental Method

The only option available for the researcher in applied linguistics to test causality or cause and effect relationships between variables is the experimental method. According to Nunan (1992, p. 24-25), '…experiments are carried out to explore the strength of the relationships between variables. ' It should be noted here, however, that because of the applied nature of this branch of knowledge, applied linguists have always been cautious and reluctant to claim a full scientific status of their discipline (Weideman, 2017). Nonetheless, as Weideman (2017) remarks,

> "Historically, applied linguistics has always been linked with the expectation…that if one could, for example, only subject the practice of language teaching to scientific scrutiny, one would somehow arrive at the 'best' way of actually going about the business of teaching and learning a second or foreign language." (p. 56)

Notwithstanding, subjecting the practice of language teaching to scientific scrutiny evoked here does not mean seeking to discover universal laws about phenomena related to language learning/teaching; it instead implies understanding and testing the effectiveness of some proposed technical solutions using the procedure of the scientific method. For this reason, applied linguistics has been qualified by Weideman (2016, p. 82) as a design discipline in that it "…typically presents

the solution to some concrete language problem in the form of a design or plan, which in its turn is informed by a theoretical analysis or justification." Applied linguistics, in this sense, does not seek to discover universal laws about a given phenomenon, but instead aims at finding effective technical solutions to language-based problems.

The design of a real experiment involves the highest level of control consisting of the isolation of a variable thought to be the cause (the independent variable) and manipulating it against the effect (the phenomenon understudy of the dependent variable). This design necessitates that the level of all the other variables is the same for the whole selected sample understudy. The sample is, then, divided into (a) control group (s) and (an) experimental group. A pretest should be administered to ensure that the two groups are identical at all significant research levels. Then, during the treatment period, only the experimental group is exposed to the treatment or the manipulation of the independent variable. Once the treatment period is completed, a post-test, which should be equivalent to the pre-test, is administered to both groups to determine the extent to which the independent variable is responsible for any differences in the pretest/posttest results between the experimental group and the control group. A critical remark is in order here: only the use of inferential statistics can prove the existence of relevant differences.

Several types of experimental designs, however, can be found in applied linguistics literature. In addition to model or real experiments described above, there are, at least, three other types, which differ in some essential aspects of this model. According to Al Alami (2015, p. 1333), the types of experiments available to the applied linguistic researcher are: "… pre-experimental design, real experimental design, quasi-experimental design, [and] ex post facto design". According to this typology, only real experiments enable the researcher to test the existence of a cause and effect relationships; the other types can only be used to pave the ground for the implementation of true experiments.

Once the collection of experimental data is complete, the researcher submits the data to quantitative analysis through the use of statistics. In this regard, a distinction is made between two types of statistics: descriptive and inferential. As stated by Levon (2010, p. 70), "Descriptive statistics are indices that give information about the general shape or quality of the data, and include such things as the mean (i.e., average) and the median (i.e., middle) of the data.". To determine the existence of significant patterns in the data concerning the strength of the cause and effect relationship, the researcher should resort to the use of the second type, namely inferential statistics. According to Levon (2010, p. 70-71), the first thing that inferential statistics test is the null hypothesis. If the null hypothesis is valid, the cause and effect relationship stipulated by the research hypothesis is not valid. Following the falsificationists' principle, if the thesis in question is well-grounded in the theory of the field, then the rejection of the research hypothesis in a rigorously controlled experiment signals a significant development in the disciplinary field in question. However, if the null hypothesis is not valid, this means that the relationship stipulated by the theory has been confirmed. Although making an original contribution to their field of study is not a requirement at the Master level, students should not fall into the trap of seeking confirmation at all price. The development of the ability to eventually make such contribution requires, following Popper, first and foremost developing the right attitude. This attitude should

push them to strive to falsify the experimental hypothesis: 'Succeeding' at confirmation is not always a proof of the validity of the methodological procedure.

The basic structure of the quantitative analysis is succinctly summarized by Levon (2010, p. 76) as follows:

- We identify the variable of interest (dependent variable).
- We use descriptive statistics to get ideas about potential patterns in the data.
- These patterns then help us to devise experimental and null hypotheses.
- We then use inferential statistics to test the null hypothesis.
- If these inferential statistics return a p-value less than or equal to 0. 05, then we have statistical significance and can reject the null hypothesis.
-If the p-value is more significant than 0.05, then the null hypothesis cannot be dismissed, and we are unable to support the claims made by the experimental theory.

According to Nunan (1992), there are four most used types of statistical analysis in applied linguistics: the t-test, ANOVA, Chi-square, and correlation. Given that the Master dissertation is only a first initiation to research, students who choose to use an experimental design are generally advised to limit the number of variables to one independent and one dependent variable. As far as the choice of the right statistical test to use, Levon (2010, p. 76) offers ample advice in the form of an algorithm of options. For example, when only one independent variable, which is categorical in type, is manipulated against one dependent variable, the researcher has two options depending on the type of dependent variable. The researcher uses either a t-test- in case the dependent variable is continuous in kind- or a chi-square -when the variable in question is categorical in type.

The experimental method is used to test the strength of the cause and effect relationship. However, despite its highly demanding methodological rigor and the use of sophisticated measures of inferential statistics, the use of this method failed to provide teachers with efficient solutions to classroom language-based problems. The failure of this method to do justice to the complex phenomena of human phenomena, in general, and to provide language teachers with innovations that are directly applicable to their classrooms, in particular, was caused by several factors (Nunan, 1992) (Dornei, 2007). Dornei (2007) advances two significant factors that have pushed applied linguistic research to adopt alternative methods and paradigms: first, the complexity of the language classroom, as being "the main venue of language learning", and, second, the emergence of new research themes-like gender differences and ethno-linguistic variation, that are challenging to intervention conceptions based on the manipulation of one or two variables.

The Symbolic Science Paradigm

The most essential paradigm that has challenged the hegemonic domination of the experimental, analytical approach in the social sciences is the symbolic science paradigm. This paradigm is, according to Popekewitz (1984), called so because it assumes that human beings who belong to the same community create and cultivate the rules that govern their lives through the behavioral patterns and the daily exchanges; moreover, the processes of the creation and cultivation of these rules are mediated by diverse symbols. The assumption that human beings have agency over the creation and sustainability of the rules that govern their lives and the lives of

those who live with them in the same community marks a radical departure from the idea of universal laws promoted by the Empirical /Analytical paradigm, following the model of physical sciences. Central to the proponents of this paradigm is the idea that social life is mediated by symbols (ideas, concepts, and languages) which are culture-specific and, thus, context-bound. It follows, then, that the only way to understand and appreciate the rules through which members of a given human community govern and sustain their lives is to conduct fieldwork to study the specific intentions and meanings that members of this community give to the habits and symbols they use in their everyday interactions. Crucial to achieving this understanding is the notions of inter-subjectivity, motive, and reason. In addition to the study of the causes of a particular phenomenon, symbolic sciences also study the motives and intentions underlying the behaviors and the discursive practices of those involved in the making of that phenomenon.

According to Popkewitz (1984), five assumptions form the basis of this paradigm. First, the rules that govern and sustain the lives of human communities are specific to a particular culture and context and, thus, should not be assumed to be directly applicable to another context. Second, symbolic theory aims at developing a data-based description of the behavioral patterns and discursive practices used by members of a particular community to create and cultivate the social conventions that govern their lives. Third, Symbolic science adopts a neutral stance vis-as-vis its object of inquiry in the sense that research conducted within the framework of this paradigm should seek to describe adequately the reality of the context understudy without making any attempt to change that reality. Fourth, while this paradigm recognizes the role of formal logic in articulating consistencies and discarding fallacious propositions, it relegates the use of mathematics and statistics to a secondary position in the scientific description. Fifth, symbolic science provides synchronic descriptions to particular contexts. In other words, it confines itself to the story of the current and does not express speculations about the past or future states of the communities and phenomena understudy.

Qualitative Methodology

The proponents of the symbolic science paradigm advocate the use a qualitative methodology to investigate the behavioral patterns and the discursive interactions of members of cultural groups taking into account the participants' reference schemata. Based on the assumption that reality is dynamic and that scientific truth is relative and subjective, the researcher adhering to the principles of this methodology adopts an insider's view in order to be able to get naturalistic data concerning the rules that govern and sustain the social and cultural lives of the subjects. The 'thick' descriptions and the data emanating from the study and documentation of single instances are supposed to serve a basis for the development of more robust theoretical frameworks that would account for the potential patterns resulting from data analysis.

Ethnography

Ethnography, which originates from anthropology, has evolved to become an effective humanistic research method that can provide a "thick description" of the life of a cultural group and give its members agency to voice their view about the real struggles they face in their daily lives. Lecompte and Shensul (2014) distinguish between two major eras in ethnographic research. A first period which has lasted until the nineteen sixties and which was characterized by longitudinal studies where ethnographers immersed themselves in the communities they wished to

study for long periods that may last for years to be able to provide a comprehensive description of a whole cycle of cultural groups. This immersion approach was greatly influenced by the method of 'participatory observation' developed by Bronislaw Malinowski (1884-1942). After that period, however, ethnography adopted a new approach based on frequent short visits to the research site to work on issues of a narrower scope that focuses only on one aspect of the life of the group understudy. Consequently, ethnography has been embraced by educationalists and applied linguists to deal with the real problems of teaching and learning as the shareholders themselves experience them. VanLier (1990) argues in favor of the use of quasi-ethnographic methods that can fit comfortably within the cycle of academic research at the Master and doctorate levels. Van Lier (1990) summarizes the evolution undergone by this method in its quest to adapt to the problems of education as follows:

> "Gradually, ethnography has expanded its sphere of application from fieldwork among unknown ethnic groups to the investigation of groups of people (however identified) in industrialized countries and urban settings, and from there has moved beyond urban anthropology into the social sciences, and finally into education, where at times the classroom is treated as an identifiable group with its cultural characteristics." (p. 41)

Anderson (1998) defines ethnography as follows:

> "The term ethnography generally refers to research which has one or more of the following features: a strong emphasis on exploring phenomena within their natural setting; a tendency to work with data which is not pre-coded in terms of its analytic categories; investigation of a small number of cases; and a form of analysis which emphasizes description and explanation rather than quantification and statistical analysis…" (p. 121)

According to Nunan (1992), ethnography is hypothesis-generating rather than hypothesis testing and seeks to develop theories that are grounded in data. Anderson (1998) defines grounded theory as follows:

> "Grounded theory is a general methodology for developing theory that is grounded in data systematically gathered and analyzed" (Straus and Corbin, 1994, P. 237). It is an inductive approach to theory development …new data are collected in multiple stages. Emergent themes are identified, interpreted, compared, and refined. This process creates a funnel of new information from which constructs and theories are developed... "(p. 122)

For Van Lier (1990, p. 42), this method has been adopted in the field of education because, compared to the experimental method modeled on the exact sciences, it offers two different advantages:

(i) an emic viewpoint
(ii) a holistic treatment of cultural facts or, in other words, a concern with context. '

Another crucial distinctive feature of ethnography, Van Lier (1990) adds, lies in the opportunity it offers for teachers and learners participation.

Dornei (2007, p. 132) describes the complex process of ethnographic research in terms of four phases. First, the ethnographer enters into a strange environment and attempts to get familiar

with it through the help of members of the target community. In this phase starts "mapping the terrain" and taking field notes. Second, when the researchers feel familiar enough with the new environment, he starts spotting, contacting, and interviewing key informants in the field to develop initial hypotheses. The third phase is the most productive because the researcher is now fully cultured to the target group and consequently, he is capable of generating more sophisticated hypotheses through the use of a variety of techniques. In the fourth and last phase, the researcher leaves the field to be able to sift the findings and to arrive at conclusions.

Ethnography is a qualitative method based on the principles of the constructionist paradigm, which considers truth to be context dependent and reality socially constructed. This method allows the researcher to apprehend reality from both an insider's and an outsider's perspective to be able to develop more adequate theories that are grounded in data. However, while ethnography is now well-established in educational research, in general, and in international English education, in particular, this method also is far from being immune to criticism. In this regard, while acknowledging the role that ethnography may play in forging a "professional sociological imagination" among English as foreign language practitioners, Holliday (1996) draws attention to the fact that ethnographic research has wrongly been confined for a long time to the study of verbal data in English language teaching classrooms. Forging a fully-fledged professional imagination, according to Holliday (1996), requires broadening the perspective of ethnography to include all the other possible types of data about participants' behavior.

Problem statement in the two paradigms

According to Nunan (1992, p. 211), for an activity to be considered research, it should contain at least three elements: "a question, data, analysis, and interpretation."It follows, then, that if the statement of the problem is considered to be the heart of the research process, the formulation of the research question should be, equally, considered to be the heart of the problem statement. The statement of the problem should be conceived as an argumentative text, the main aim of which is the provision of the necessary elements for the justification of a piece of research. In other words, the statement of the problem aims at persuading the reader of the relevance and feasibility of a given research issue. To convince the reader of the pertinence of the problem, the statement of the problem should present the research theme, a specific problematic issue falling within the scope of a general question, in addition to any other pieces of information susceptible to add clarity and strength to the argument.

The problematization of a research issue is accomplished through the careful and accurate formulation of a research question (s). For Nunan (1992, p. 213), the research question should meet two requirements: "1. worth asking in the first place and 2. capable of being answered". In other words, the research question should be relevant and researchable. As far as the second requirement is concerned, (Leedy, 1980, p. 52) argues that "for a problem to be researchable, it must imply interpretation of the data leading to a discovery of fact" .. Interpretability of data is the key to making a contribution to one's academic discipline. Interpretation, however, should not be confused with data collection and analysis (Leedy, 1980). The interpretability of data depends mainly on the researcher's ability to craft his argument with a high level of precision and consistency following the disciplinary conventions. The avoidance of fuzzy thinking and the use of inchoate concepts can only be achieved through a systematic choice of the methodological tools

during all the phases of the research process: the formulation of the question, the statement of the problem, the design of data collection tool (s) as well as the analysis of the data. However, to be systematic, the researcher should demonstrate awareness of the link between the critical concepts highlighted above, namely, paradigm, methodology, and method. This awareness should be displayed, first and foremost, in the statement of the problem.

Nevertheless, methodology manuals in applied linguistics (for example, Dornei (2007), Nunan (1992), Paltridge and Starfield (2007), Sunderland (2010)) content themselves with stating the requirements in a one- fits -all fashion, which blurs the differences between the different methodologies and ,thus, confuses the students. As Chevrier(2003) demonstrates, ethnography and the experimental method differ in fundamental ways in their way of stating the problem. Understanding these significant differences will certainly enable methodology students to appreciate the link among the concepts in question better.

To problematize an issue, two options are available to the researcher, according to Chevrier (2003). The first option consists of reviewing the literature peculiar to a specific academic domain so as, first, to spot potential exact gaps in its conceptual framework, and, second, to propose (a) solution(s) to bridge those gaps through an a priori planned methodology, which yields particular inspections. The second option consists of conducting observations and analysis of a typical situation to get a deeper understanding and to infer the constituting concepts that would enable the researcher to formulate a grounded theory. For Chevrier (2003), the first procedure is deductive and verificatory, whereas the second is inductive and generative. Consequently, these two approaches to research, which correspond respectively to the empirical, analytical paradigm and the symbolic science paradigm, involve two distinctive logical procedures in problematizing a research issue.

Problematization following a Hypothetical-deductive Procedure

The confrontation of a theoretical construction with a particular reality forms the essence of the statement of the problem from the hypothetico-deductive perspective (Chevrier, 2003). The specific research question whereby this confrontation is accomplished should be formulated through the use of concepts emanating from a critical review of the literature related to the theme understudy.

For it to culminate successfully in the specification of a research question, the elaboration of the statement of the problem should follow a logical sequence of steps (see Figure. 1). First, the researcher chooses a theme of research based on his personal and professional experience as well as his review of the related literature in his domain. The introspection phase about a theme which should be exciting and motivating enough should be followed the challenging task of fine-tuning the researcher's interest to the interests of the academic discipline in which he is specializing. In other words, the researcher should strive to formulate the theme of his interest using theoretical constructs which are relevant to the literature of the discipline of his specialization. Second, the researcher formulates a general research question based on the collection and the careful examination of general knowledge about the chosen theme. The aim of this examination is the identification of the general concepts, the important principles, the theoretical models as well as the methodologies of predilection in researching the topic understudy.

Third, based on the public knowledge, the general question and the methods used in researching it, the researcher engages in deepening his expertise about the topic through adopting a critical stance vis-à-vis more specific disciplinary writings (research articles, research reports, proceedings of scientific conferences, etc.). The crucial reading of the particular literature directed by the general question is an oriented quest that leads to the generation of particular questions. Continuous questioning about the integrity of the propositions, the quality, and validity of the proofs, as well as the degree of compatibility of the hypotheses with one another stand at the genesis of this critical attitude. This continuous questioning serves the construction of a mind map of the collected information, the assessment of the pertinence of information, and, hence, facilitates the formulation of a more specific research question.

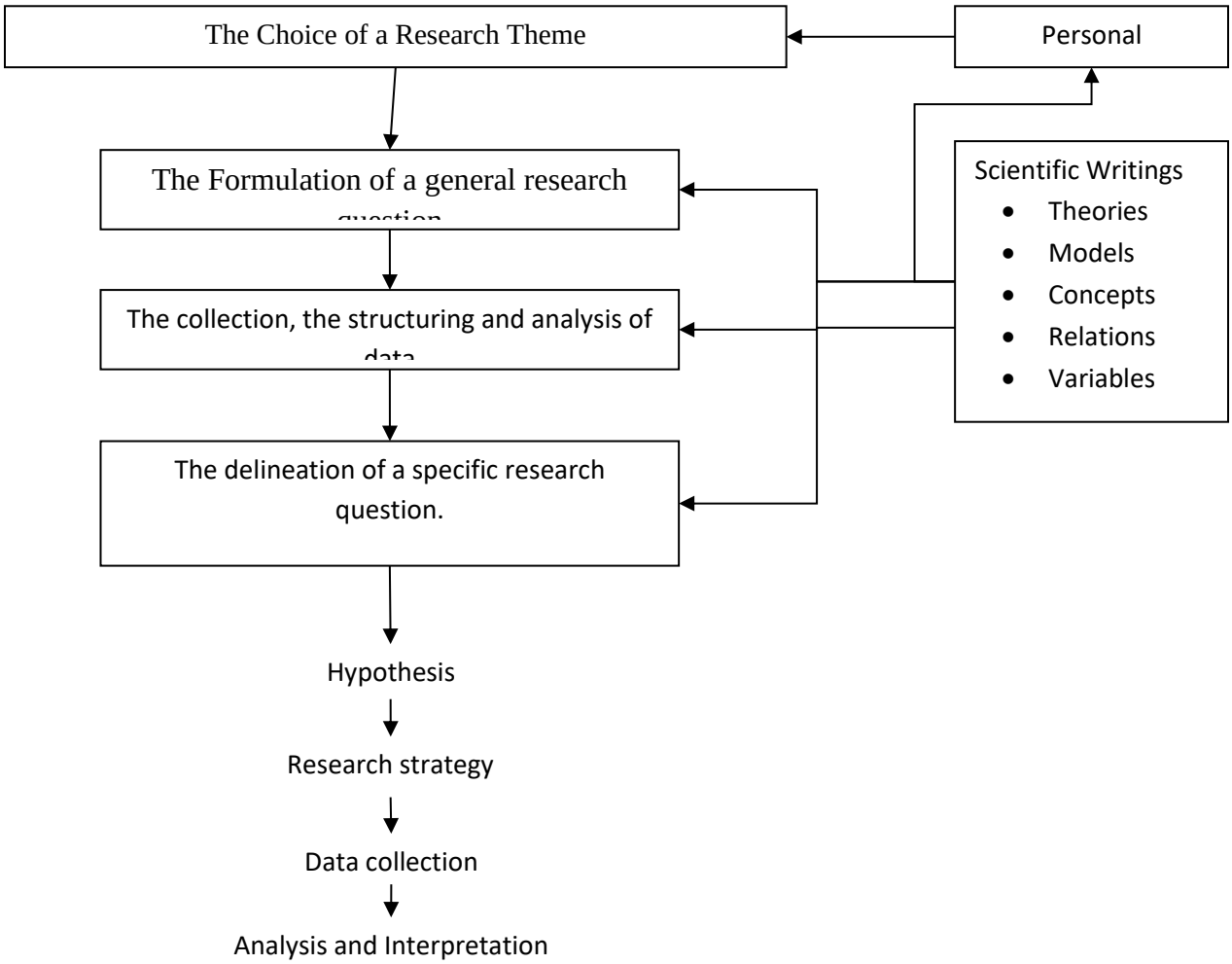

Figure 1. Problematization following a Quantitative Methodology (Chevrier, 2003, P. 57) (my translation)

The fostering and sharpening of a productive critical attitude require from the researcher the deployment of several fundamental skills such as classifying and evaluating pieces of research on based on specific criteria, analyzing an argument, comparing, making a synthesis and structuring information (facts, concepts and ideas). In this context, students reading texts about a given topic are encouraged to make their proper summaries in the form of tables and figures. On one hand, this facilitates in a fair number of cases the comprehension of ideas, and on the other hand, this facilitates the rapid establishment of less documented or even ignored relations between concepts. The synoptic representation of information, for example, constitutes an effective strategy for finding specific research problems.

The identification of a gap or gaps in the organization and, or coherence of the existing knowledge about the topic is the only valid proof of the success of the process whereby the researcher moves from a general question to a more specific research question through the critical analysis of the specific literature on the topic. Cheverier (2003) lists six types of gaps in academic knowledge about a research topic: 1. The total or partial absence of knowledge concerning the elements of answer to a general research question; 2. Certain conclusions of preceding research are not applicable to a particular situation; 3. certain variables have not been taken into consideration in different pieces of research in spite of the existence of reasons for their potential influence; 4. Feelings of incertitude concerning conclusions because of methodological problems; 5. Contradictions between the findings of research dealing with the same topic; 6. The absence of verification of an interpretation, a model, or a theory.

Stating a particular research problem involves the translation of specific knowledge needs into precise questions, so specific that they serve as a framework for the design and implementation of a strategy to answer them. The specific research question should be formulated in a precise way, and each term should be clearly defined, particularly in an operational manner. An operational definition of the key constructs in the particular research question means that each element of the problem should be observable or measurable.

Moreover, the particular question corresponding to a particular problem should meet the criteria of feasibility: the scale of the question, the time available for doing research, the money available, the collaboration of other people as assistants or subjects, the possibility of doing research in the desired context, accessibility to the measuring instruments, etc. In spite of the importance of the criteria of feasibility, however, the pertinence of the research question about the whole problem remains the central criterion in the choice of a particular research issue.

Problem stating following the hypothetico-deductive procedure should be conceived, according to Chevrier (2003), as the crafting of a coherent, complete and compelling argument on the basis of a critical analysis of the literature of the utility and necessity to explore empirically a particular question or to verify a specific idea (hypothesis) to demonstrate the efficiency and need to advance current knowledge about a particular phenomenon.

a) The pertinence of the piece of research should be underscored. That is, the theme and the general research question constitute (or should form) an authentic (actual) preoccupation for researchers, practitioners or decision-makers.

b) Within the framework of the general research question, pertinent information is presented (empirical and theoretical research results, facts, concepts, relations, models, theories) either to demonstrate the existence of a specific research problem, or to provide elements of the solution to the particular research problem. This information provides a conceptual or theoretical framework for the piece of research.

c) A particular problem is highlighted

d) A particular research question is formulated to guide the collection of the data that would allow the solution of the particular problem.

Figure 2: A Checklist of the elements of problem statement following a deductive procedure by Chevrier (2003, p. 67).

Problematizaton following an inductive procedure

In contrast with the hypothetico-deductive process which confronts a theoretical construction to a particular reality, the crafting of the problem statement argument following an inductive procedure is realized through the formulation of iterative (repeated) questions based on the sense given to a concrete situation. In other words, whereas the empirical, analytical paradigm is concerned with verifying the validity of causality laws abstracted from context, the symbolic science paradigm seeks to develop more robust theoretical frameworks for the comprehension and description of a particular phenomenon. To achieve this aim, this paradigm allots crucial importance to the meanings that all participants give to their emerging behavioral and discursive patterns during the events and activities constituting that phenomenon. Unlike experimental research which attempts to answer questions that are extraneous to the cultural context of the study, ethnographic research, according to Spradely (1980) (as cited in Holliday 236), seeks to discover "both questions and answers … in the social situation being studied." The procedure of problematization is, therefore, totally different.

According to Chevrier (2003), the process of problematization of a research issue within the framework of the symbolic science paradigm consists of four significant broad steps: 1. the formulation of a provisional research problem based on a concrete situation manifesting a particular intriguing phenomenon; 2. the formulation of a research question allowing the choice of an adequate methodology; 3. the elaboration of interpretations based on the collection and the inductive analysis of data-generalizations based on the study and documentation of single instances forming the phenomenon under investigation;4. the iterative reformulation of the problem and the research question in tandem with the raising awareness resulting from the collection and preliminary analysis of the data (see Figure. 3).

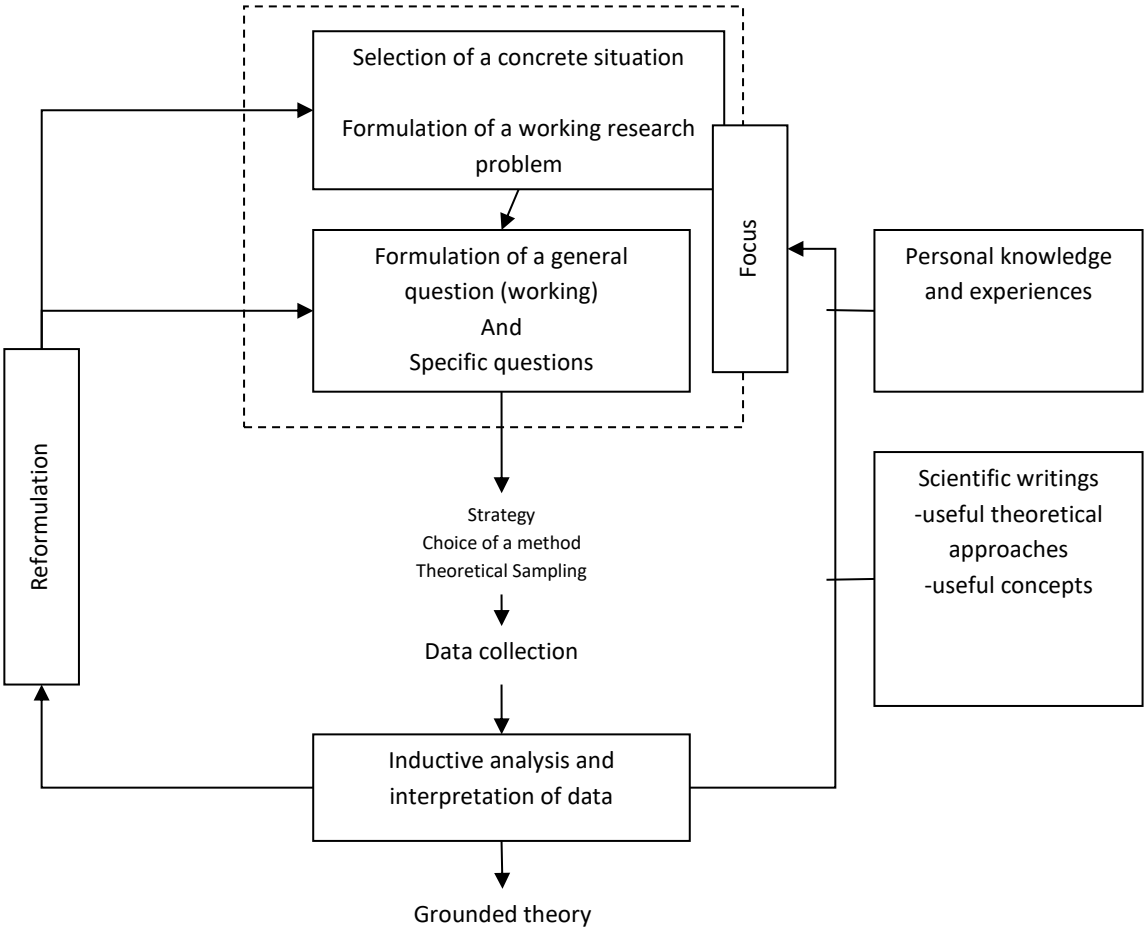

Figure 3: Problematization following a Qualitative Methodology (Chevrier, 2003:72) (my translation)

First, research within this paradigm does not begin until the researcher enters the field. The first step towards the formulation of a general question is the selection of an interesting phenomenon within the cultural context of a particular group. It should be noted here that, unlike in the experimental, analytical paradigm, the researcher should not be concerned with whether or not the phenomenon has been studied before, but with the potential of the study of this phenomenon to bring about significant new knowledge. Chevrier (2003) lists several types of concrete situations which are likely to motivate the choice of an aspect for an ethnographic study: 1. Established original practices (for example, a teacher who uses a particular method or a school which is distinguished by an alternative educational approach); 2. Recurring problematic events or practices which fail or that are being difficultly established; 3. Happy games or practices that are succeeding; 3. Games which have unexpected components or interventions or unintended consequences; 4. Habitual activities or current practices that are undocumented.

Second, the researcher proceeds from the selected situation to formulate a general research question. According to Chevrier (2003), this provisional question should be general enough to allow the generation of more specific questions that would facilitate the discovery of essential aspects of the phenomenon understudy. This general question should also be precise enough to focus the investigation. The focus of research has two main functions: a) establishing the limits and the territory of research, and b) determining the pertinence of the collected information through the provision of cones to decide to include or exclude data in the collection of data or the analysis of data. To formulate this first question, the researcher makes use of his knowledge and personal interpretations. Then, the researcher chooses the methods that he intends to use (observations, interviews, and records) and determine, through theoretical sampling, the participants and the documents to be consulted. The research plan will also be emerging because it depends on subsequent questions.

The general question should allow the generation of specific questions aiming at exploring the structural elements, the interactions and the processes (socio-cultural and organizational) to determine and describe the essential dimensions of the phenomenon. The challenge for the researcher is precise to discover the sharpest and most perceptive questions. However, contrary to the affirmative procedure of the experimental/analytical paradigm, where the specific question remains unchanged during the whole data collection process, the focus is highly likely to change in the way following the procedure of the symbolic science paradigm.

Third, after a first collection of the data, the researcher analyses them and draws a rich and detailed description of the events (full story). Based on this description, the researcher elaborates the hypotheses aiming at comprehending globally or partially a phenomenon. A critical remark is, however, in order here: by hypothesis here is meant an interpretation in the broad sense of the term and not hypotheses with operationalized variables, because the aim is to give insight to the events rather than to establish a linear, unidirectional causal relationship between an independent and a dependent variable. This elaboration of hypotheses, as well as the inductive analysis of data, cannot be realized by demanding from the researcher to make total abstraction of what he knew. To elaborate his grounded theory of the phenomenon, the researcher uses principally (mainly) concepts and hypotheses that have emerged from the collected data. This process, however, does not prevent the researcher from reviewing relevant literature, particular to those using an inductive procedure to obtain useful concepts and to assist him in his comprehension of the phenomenon. In other words, to adequately explain a phenomenon, the researcher should not fall prisoner to one theory. Instead of imposing theory on data, the researcher should possess the skills (theoretical insights) and the necessary attitudes (theoretical opening) to be able to conceptualize and elaborate theory based on data.

Fourth, the effort to give sense to the data enables the researcher to raise awareness of certain particular issues (gaps, incoherencies, etc.) in his knowledge of the phenomenon. These issues concern the unknown facts that prevented him from comprehending the event in its entirety at the beginning of the study. These specific problems lead to raising particular questions which guide the collection of pertinent information. To answer these particular questions, the researcher conducts a more in-depth study of certain particular aspects of the phenomenon. This in-depth analysis permits him to elaborate a grounded theory (emerging concept, emerging relations, and

emerging model) which is complete and more valid (credible). The general research problem can be reformulated during the research process. It can happen especially at the beginning of research that the formulation of the question proves to be incomplete or inadequate in the light of observations emanating from the primary inductive analysis of the data. The wording itself of the problem can, therefore, evolve during the study. The synthetic and final wording of the problem, no matter whether there was a change or not, will be accomplished towards the end of the research. It should be expected, then, that the wording as it is presented in the writing phase to be different from the initial drafting of the problem at the beginning of the research process. The specific questions themselves change to adapt to the observed changes. These questions they are added when there is a lack of information. However, these questions should disappear as soon as they are answered. These answers are reached towards the end of the inductive analysis of the data, when the portrait is composed and begins to acquire sense. The same thing applies to the general question. Unlike in the deductive procedure, where the general question remains unchanged during the collection of data, the research question in an inductive method can itself change during the process.

a) A concrete (social situation), containing a particular phenomenon should be evoked.
b) A research problem should be asked about this intriguing situation.
c) A research question is formulated.
d) The pertinence of the research problem should be demonstrated, i.e., that this problem (or a question) constitute (or should constitute) a real preoccupation of practitioners decision-makers and researchers.
e) This research problem represents a theoretical preoccupation (construct, or approach) and that the information known about the issue should be presented (research, models, or theories).
f) Otherwise, the method, the model, the concept that has been borrowed or emerged should be mentioned.
g) We demonstrate how the research allows us advancing knowledge concerning a problem understudy.

Figure 4: A Checklist of the elements of problem statement following an inductive procedure by Chevrier (2003, p. 80)

Conclusion

In academic research, obtaining results that are interpretable and, thus, conducive to relevant answers to study questions depend on the researcher's adoption of a systematic approach. To be systematic, the researcher should be consistent in the selection of his data collection techniques concerning three levels: paradigm, methodology, and method. Focusing the research methods course on the existing contrasts between two methods, experiment and ethnography is an effective strategy for raising apprentice researchers awareness of this crucial principle. Moreover, to enhance students' understanding of this principle, the research methods course should articulate the fundamental differences in problem statement around the two traditions. In experimental design, the theory is in quest of real data, whereas, in ethnography, the reality is in search of an argument. These two approaches to research, which correspond, respectively, to the empirical, analytical paradigm and the symbolic science paradigm, involve two distinctive logical procedures in problematizing a research issue.

Of course, this paper has presented only theoretical aspects of the learning information that should be highlighted and enhanced to raise these students' awareness of the interconnection between the three concepts in question. This type of information is necessary, but not sufficient. A sophisticated teaching methodology articulated around these contrasts is needed to ensure the students' grasp of this principle. This methodology should aim at involving students in the analysis of the epistemological, methodological, procedural, and discursive aspects of concrete samples of research following the two traditions in question. Task-based teaching of the different sub-skills of producing research, however, is necessary to give students hands-on experience in researching these two traditions.

About the Author:

Mohammed BOUKEZZOULA holds a doctorate degree in applied linguistics from Constantine 1 university, Algeria. Currently, he teaches research methods and applied linguistics courses at M.S.Benyahia university in Jijel, Algeria. In addition, he has supervised and examined a large number of master dissertations in his field of specialization.
https://orcid.org/0000-0002-2456-6944

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