

Knowledge Management Methodologies

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Abstract: Knowledge management (KM) research and practice embraces a wide range of activities and interests. The KM domain covers, on the one hand, technological interventions that aim to support knowledge dissemination and, on the other hand, to appreciation of social approaches that bring people together to share their experiences. The former represents an earlier bias in the field while the latter is more indicative of the current emphasis. Such a shift in emphasis has called for a shift in the way that the research and practice is undertaken; this paper focuses on research activities and asserts the appropriateness of a particular methodology for today's knowledge management research.

This paper will firstly consider the range of research methodologies that have been employed in knowledge management research. It will move on to consider the use of one particular research methodology, ethnography, as a framework for understanding the more personal elements of knowledge. It is contended that use of ethnography, which emphasises observation within a compact cultural setting, offers a potentially ideal method of undertaking research in knowledge management because it concentrates on a community and in the provision of descriptions of how members of the community interact with each other. Utilisation of ethnography as a research method sits comfortably with theories of knowledge, which acknowledge the tacit element of knowledge and its experiential embeddedness; ethnography is therefore put forward as a meaningful methodology for contemporary knowledge management research.

Keywords: Ethnography, research methodologies, tacit knowledge

1. Introduction

There is a developing body of literature in knowledge management that aims to use models of managing knowledge more purposefully in real world situations. In developing research, a common approach has been to create a distinction between tacit and explicit knowledge. The tacit/explicit distinction has led to differing approaches in the conduct of empirical research. Of considerable importance in the adoption of a particular research method to investigate knowledge, tacit and explicit, is the utilisation of a research method suitable for illuminating the research domain as well as offering practical insight.

This paper will first consider how research approaches distinguish between tacit and explicit knowledge and the impact of this distinction upon the research methods used in the conduct of knowledge management research. Then the use of ethnography as a potentially suitable research method will be considered in relation to knowledge management research.

2. Tacit/ Explicit knowledge distinction

One of the features of research in the knowledge management field has been the concern of

researchers to identify the ambit of their research. Thus, researchers have tried to offer explanations, define meaning, characteristics or features of their understanding of knowledge and related terminology. The effect of these efforts has tended to result in myriad definitions of knowledge. Thus, Blackler (1995, p.1032) describes knowledge as "multifaceted and complex, being both situated and abstract, implicit and explicit, distributed and individual, physical and mental, developing and static, verbal and encoded", an interpretation echoed in Davenport & Prusak's (1998, p.5) description of a "fluid mix of framed experience, values, contextual information and insight". Samiotis et al. (2003, p.176) implicitly reference knowledge's multifacetedness as it "reflects the intentions of the humans who create it and interpret it". This human element of knowledge management research is also acknowledged by Chatzkel (2002) and with Fowler & Pryke's (2003, p.258) view that knowledge is "as much about the perception arising from information... refracted through the individual's personal lens".

The various definitions offered, although not exhaustive, reflect a broad spectrum of views about what constitutes knowledge. More recent research has developed a greater emphasis on the human aspect of 'transforming' information 'in to' knowledge.

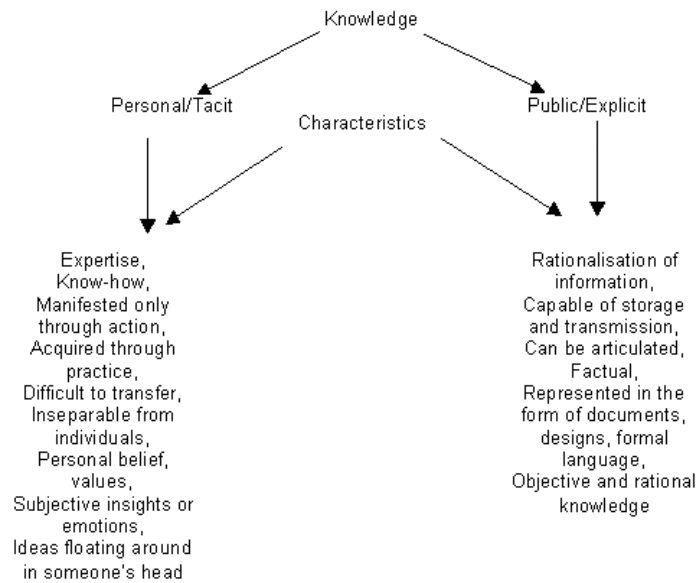


Figure 1: Knowledge elements

Figure 1 reflects the tacit/explicit split as one way of highlighting the different aspects of knowledge, with tacit knowledge attempting to capture the 'personal' elements of knowledge and explicit knowledge representing its more tangible elements. The proposed method to better understand the research is to reflect on what features tacit knowledge is observed as having, or, what makes tacit knowledge distinct from explicit knowledge (or as it may be termed 'the informational content of knowledge') as identified in prior research.

In scientific theory generation, Polanyi (1966) posited that it was the application of tacit knowledge that led scientists to generate new theories, premised on the conception "we can know more than we can tell" (1966, p.18). This 'knowing more than could be told' has been regarded as the 'tacit' aspect of knowledge. This idea of a tacit element of knowledge has been adopted and interpreted in the knowledge management literature (Nonaka & Takeuchi 1995; Carayannis 1999; Hildreth et al. 1999; Alavi & Tiwana 2002). Thus, Hendriks & Vriens (1999, p.114) acknowledge Myers (1996), who states, "at its core, knowledge must be seen as tied to the personal or human element. Knowledge as we generally understand it, resides in peoples' heads". Thus, tacit knowledge is perceived as being more personal and encompassing "factors [such] as personal belief, perspective and values embedded in individual experience" (Hendriks & Vriens 1999, p.114).

Evidence would suggest that, in understanding knowledge, and, in particular, tacit knowledge the research undertaken recognises distinctions

between different aspects of knowledge and that this are reflected in the literature by distinguishing the elements of tacit knowledge from those of explicit knowledge. However, in making these distinctions and emphasising the importance of tacit knowledge, it can be seen, in the next section, that the research still tends to focus more closely on informational aspects of knowledge, perhaps due to the greater ease with which it is possible to manage that which can be easily articulated.

3. Research approaches - Tacit/ Explicit knowledge

Although it has been stated in the preceding section that there is a developing clarity in the conceptualisation of individual aspects of knowledge with recognition of the importance of the human aspect in the development of knowledge, research, whilst acknowledging this, still tends to focus more readily upon the explicit aspects of knowledge. The tendency in knowledge management research is to reinforce the distinction between tacit and explicit knowledge. By drawing out the explicit aspects of tacit knowledge and focusing on these explicit qualities with greater emphasis there may be a tendency to pass over or exclude more detailed scrutiny of the tacit aspects of knowledge.

With regard to this distinction between the tacit and explicit knowledge and research in knowledge management, much of the literature, whilst acknowledging the importance of tacit elements of knowledge, tends to focus on its more manageable elements (Wiig 1997; Pan & Scarborough 1998; Bolisani & Scarso 1999;

Levett & Guenov 2000; Mentzas et al. 2001; Forcadell & Guadamillas 2002; Seng et al. 2002; Albers & Brewer 2003; Fowler & Pryke 2003). Thus, research tends to emphasise “from a theoretical standpoint, KMS refer to the information systems adopted and designed, which efficiently and effectively leverage the collective experience and knowledge of employees to support information processing needs, as well as enabling and facilitating sense-making activities of knowledge workers” (Wickramasinghe 2003, p.298). Here too, the research work accentuates the focus on information as a means of supporting employees engaged in ‘knowledge’ work. There is still a significant amount of literature emphasising the explicitness of knowledge, particularly through the use of technology in the research (Levett & Guenov 2000; Apostolou & Mentzas 2003; Gottschalk & Khandelwal 2003; Muscatello 2003).

However, what seems to be emerging is a growing awareness in the research community in knowledge management that there is a social element to this research area. The first ‘wave’ of knowledge management research appeared to be concerned with the need to “capture, codify and distribute organisational knowledge (usually in centrally managed computer systems)” (McElroy 2000, p.199). Over time there has been a movement towards focusing on people centred approaches in an organisation as a means of managing knowledge (Hildreth et al. 1999). With research developing awareness of the social elements of knowledge there is a concomitant recognition of the need to utilise research methods to better understand the tacitness of knowledge. In repositioning the focus more clearly on the tacit elements of knowledge, the aim of research may be to improve the management of knowledge itself. Practitioners appear to have recognised social elements of managing knowledge in such work as Sveiby (2001) and Sveiby & Simons (2002).

With research concentrating on the more ‘personal’ elements of knowledge, knowledge management systems research now encompasses the social or cultural elements of managing knowledge (McAdam & McCreedy 1999), activities in organisations that might be termed knowledge management (Janz & Prasarnphanich 2003) and organisational learning (Alavi & Tiwana 2002; Forcadell & Guadamillas 2002; Jones et al. 2003; Zárraga & García-Falcón 2003). Although there has been an acceptance that earlier knowledge management literature has omitted this ‘personal’ aspect of knowledge (Hildreth et al. 1999), it also serves to underscore the fact that this aspect of knowledge “largely, defies recording and explicating” (Hendriks &

Vriens 1999, p.115). Since research has tended to focus more easily in the explicit knowledge domain, in turn this has influenced the research approaches utilised in knowledge management research.

3.1 Research design

One of the first issues which emerge from research in knowledge and knowledge management is the degree to which research still focuses on the domain of managing explicit knowledge despite the avowed recognition of the importance of tacit knowledge. A second issue emerges when consideration is given to the actual conduct of research that is undertaken. It would appear that researchers may explicitly or implicitly state their methodological stance but subsequently appear to have difficulty in implementing the methodology in their primary research. Secondly, the methodological stance is not always evident, which may result in criticism that the research position is ambiguous and, therefore, problematic for others in the research community to construct a possible stance by piecing together aspects of the data collection and analysis in an effort to ‘assemble’ a possible methodology.

Firstly, it may be argued that, foremost in the process of constructing a research design, the researcher may be faced with the need to “to confront his or her preconceptions (prejudices) that guided the original research design...As a minimum, the researcher should identify what type of interpretivism s/he prefers, identify its philosophical roots and relate the particular strengths and weaknesses of the preferred philosophical direction to the purpose of the work” (Klein & Myers 1999, p.76). The inference is threefold. First, the research process, practically implemented, embodies the inherent preconceptions of the researcher; second, the research process should attempt to make explicit the philosophical roots underpinning the research, and; third, that the research process, by virtue of the preceding points, may ultimately be interpretivist.

Each of these points requires further elaboration. From consideration of research generally, it would appear that there is often little evidence to support the view that researchers explicitly acknowledge their preconceptions. This does not imply that the researcher has failed to reflect upon these preconceptions, merely that they have failed to enunciate them. It may be argued that this is most evident in research that exhibits the traits of an essentially positivist tradition. The basis for this assertion rests on the contention that the philosophical roots of positivism emphasise two

aspects, namely; (1) the belief of the researcher that there is an objective reality which exists independently of them, and (2) that this objective reality is capable of measurement and analysis from which may be deduced general theories with potential universal applicability.

Through analysis of the various evolutions of scientific research it can be seen that the philosophical underpinning has tended to reduce the influence of inherent preconceptions of the researcher and emphasise the importance of that which is observed. Thus, the positivist research tradition appears to be premised upon the ontological assumption that the researcher is independent of the research undertaken and that the observable world in which the research is being conducted is a world that exists independently of the research with external, concrete structures. It is for this reason that positivism tends to favour the inductive method; that information or data is gathered by careful observation of a particular phenomenon, allowing a preliminary hypothesis or generalisation to be formulated and these are subsequently tested in later research. Kuhn (1970) identifies such periods of science to be consistent with periods of 'puzzle solving'. However, it is against this backdrop that Kuhn (1970) argues that science exhibits periods when a researcher explicitly acts in defiance of the ontological assumptions which underpin their field; namely at periods when scientific revolutions occur. Whilst researchers do not explicitly negate their ontological belief in an external reality, they do, during periods of scientific revolution, reject assumptions held by the research community. This usually occurs because the methods used in 'puzzle solving' have simply failed to answer intractable puzzles.

Kuhn's (1970) view of scientific research actually undermines the claim that scientific research is essentially positivist because to achieve a scientific revolution, the general deductive reasoning from observation is rejected and this requires the scientific community to reject the second plank of positivist thinking. This rejection underscores both (1) the failure of the positivist research tradition to acknowledge inherent assumptions internal to the researcher in the development of a research design and (2) the failure of the scientific community to acknowledge

that in the actual conduct of research their ontological and epistemological assumptions underpinning this research are nothing more than paradigmatic congruence, i.e., an agreed world view or 'Weltanschauung'.

Linking this to the study of knowledge, if knowledge is encapsulated as Polanyi's (1966) 'we know more than we can tell'; then explicit knowledge may simply reflect the informational content of knowledge. Assuming that knowledge has an innate quality framed in part by our experience (unlikely to be replicable), then our view of the world is so framed that even measuring the 'concrete' world (within a positivist tradition) must lead to constructing a view of the world from which flows the scientific revolutions that Kuhn (1970) discusses. Within the recent literature about knowledge management, the positivist tradition maintains reductionist views on something that is not necessarily capable of being so examined (Hildreth et al. 1999). This poses the question of how can the phenomenon of knowledge be made 'meaning full' by the researcher?

If the research process is always subject to the inherent preconceptions of the researcher (Klein & Myers 1999, p.76), within the natural sciences, this has been sublimated by the scientific method. Social sciences, with its recognition that the methods appropriate to natural science may not be suitable, have engaged in discussion about suitability of research methodologies more openly. Thus there has been greater recognition that "one of the great dramas.... is making the transition from philosophy to methodology to design and the selection of data collection methods" (Lawler 1998, p.109). Within social science, there has been an attempt to realise the philosophical assumptions made in the conduct of research. However, translating the theoretical ideal of research in to the practical is not a straightforward process. The path to achieving valuable research is problematic. Yet, acknowledging that there are difficulties is an important step in achieving research that is of value to the social scientific research of the community.

As a starting point, an idealised model of the conduct of research is contained in Figure 2, below.

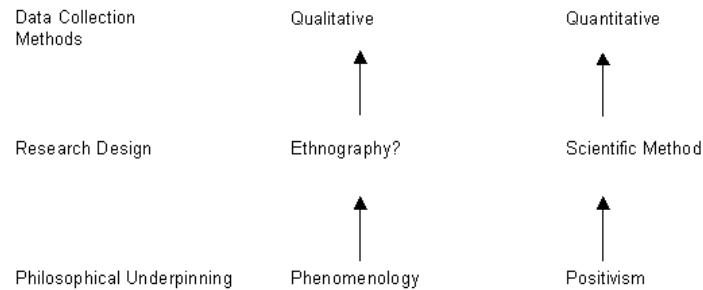


Figure 2: Simple exposition of the research process (derived from Easterby-Smith et al. 2002)

Figure 2 is based on Easterby-Smith et al's (2002) exposition of research methods. The essence of divisions in the conduct of research can be represented in a simplified way by separating the underlying philosophical assumptions that underpin the work that the researcher conducts and, therefore, influence the design of research and its practical application through the use of differing methods of data collection. Thus, a positivist view of the world is likely to be premised on the belief that observations made in the natural world enable the derivation of predictions; the same premise being equally applicable to social order. From this philosophical assumption, the likelihood is that the research design will result in the creation of experiments and numerical methods of data collection and analysis; whereas a phenomenological stance will rest upon the view

that the world is socially constructed and, therefore, interpretivist.

Figure 2 (supra) represents a simplified view of how research might evolve. The intention of this Figure is to highlight the contention that all research is underpinned and usually reflected by the philosophical standpoint of the researcher (albeit that this may not be consciously acknowledged by them), through to the design subsequently devised and finally to the way in which the researcher ultimately determines the most appropriate way to collect data in furtherance of their research objective. To reflect that there is, in practice, a greater degree of complexity in the research process, Figure 2 (supra) has been developed as represented in Figure 3 (below).

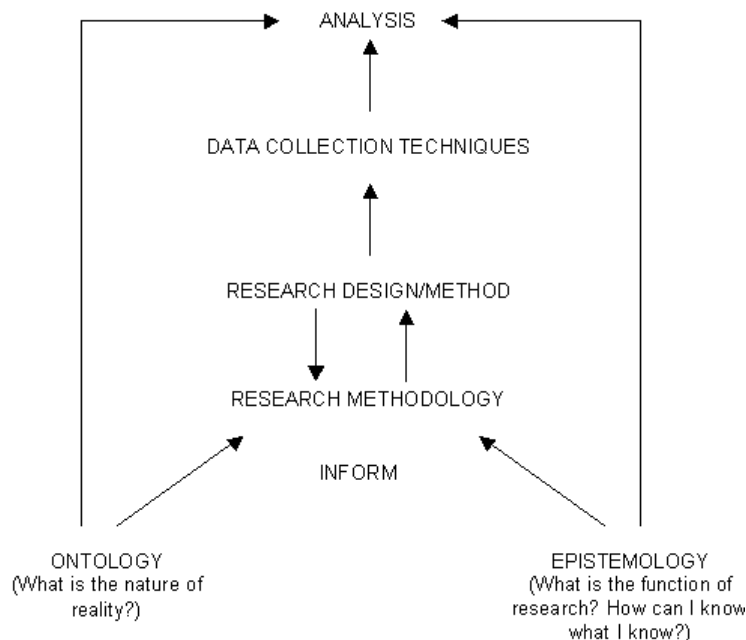


Figure 3: Second level exposition of the research process

It can be seen in Figure 3 that several areas (philosophical, research and analysis) have been developed to reflect the greater complexity that

actually occurs in the research process. Using Figure 3 consideration can be given to actual research undertaken by those writers in

knowledge and knowledge management, which will now be considered.

The first difficulty highlighted is that researchers might state their methodological stance but subsequently have difficulty in implementing the methodology in their primary research. Why is this important? It might be argued that research, which is rooted in a methodology and underpinned with a philosophy that is essentially phenomenological, may be likely to use data collection methods that are qualitative. Wilcox King and Zeithaml's (2003, p.765) four step process for measuring organisational knowledge utilises quantitative data collection methods and quantitative data analysis techniques. The use of quantitative methods for selection in the research, whilst acceptable as a method to obtain focus and to support analysis of the data collected, does appear to be at odds with the authors' perceived view of organisational knowledge; "enacted through the perspective of multiple knowers" (Wilcox King & Zeithaml 2003, p.764). Within social science, if it is accepted that the nature of reality is interpreted, then Wilcox King & Zeithaml (2003) appear to recognise this interpretivist approach; but, in the translation of the research design, employ positivist criteria. This would support the contention that there is a mixing of the methods used to conduct their research and the methodology itself.

Both Bolisani & Scarso (1999) & Apostolou & Mentzas (2003) adopt a 'case study' approach consistent with a phenomenological philosophy. Bolisani & Scarso's (1999, p.213) research question is "to investigate the correlation between kinds of knowledge exchange and kinds of ICT applications", whilst Apostolou & Mentzas (2003) are concerned with the implementation of their 'Know-Net' solution in four organisations. Two difficulties arise in relation to each authors' work. Whilst both would appear to have implemented a methodology consistent with a phenomenological position, there is a lack of elucidation about the case studies conducted. This leads to the second difficulty that the use of a 'case study' could be construed as overly broad in its terms. The data collection methods utilised in a 'case study' do not fit neatly within Fig. 3 (supra). Similarly there appears to be a degree of confusion in the work of Lytras & Pouloudi (2003). In a section headed 'Research Methodology', the authors describe how their practical involvement came about. Action research is cited as the reason for involvement in this project, without subsequent clarification of its use for the analysis of their findings. Their failure to explicate their philosophical assumptions more clearly suggests that there is a difficulty in translating a theoretical design for research into its implementation.

Sometimes, rather than confusion about translating a theoretical research design into its practical implementation, it becomes too difficult for the researcher. Thus, Wickramasinghe's (2003) research concerns describe "case findings from three consulting companies – approximately ten years after they...adopted a knowledge management system...The data were gathered using standard techniques for conducting qualitative multiple case study research" (2003, p.298). This could be described as a lucid exposition of the research design adopted together with the methods utilised to collect data. However, the utilisation of thematic coding raises the issue of its appropriateness within a qualitative framework as it might suggest a degree of quantification in analysis.

Similarly, Hendriks & Vriens (1999) research methodology appears to entail 'empirical investigation'. This would suggest that they are concerned with developing an understanding of a given situation based on experience. However, it might be argued that, although empirical investigation is closely allied to the scientific method approach to research, the result of which is that, though many practice research in this way, little, if any, attempt is made to explicate it within an overall framework for the conduct of research (usually due to its longevity in terms of a method for conducting research). Unfortunately, the result of this is that there is a danger that the scientific method is adopted without any obvious consideration of its most appropriateness for undertaking research. Additionally, it has been suggested that capturing tacit knowledge is something that "largely, defies recording and explicating" (Hendriks & Vriens 1999, p.115) and this may highlight the need to think carefully before employing any research methodology. Similarly, Gottschalk & Khandelwal's (2003) 'empirical study' of the factors that determine knowledge management technology projects in law firms, entails a survey from which the results are subject to numerical analysis. An empirical study tends to be an examination of the research phenomena based on observation with subsequent analysis using quantitative measures and data analysis techniques. In what way does this differ from 'thematic coding' in a piece of qualitative research?

As has been discussed earlier, many pieces of practical research clearly enunciate the way in which the researcher intends to conduct the research whilst rarely making explicit their understanding of the research process. Sviokla's work (1996) attempts to deal with this by acknowledging that within his research domain

previous studies have developed theoretical models which have rarely been tested in fieldwork. In order to develop a predictive model, Sviokla (1996) breaks down the research process in to two phases; the first to develop the variables for later testing in phase two. Thus at one level, he (Sviokla 1996) attempts to address the process of research design. However, the main difficulty, and a major feature of research in a non-traditional or social science area is the mixing of data collection methods. This appears to be a frequent feature of case studies. The overall impression is that the researchers seek validity and reliability for the subjective aspect of their work by inclusion of facts and figures. It must be asked if this is appropriate. Should a case study be concerned with facts and figures? Sviokla (1996, p.25) states at the outset that his work is concerned with “not about new organizations or those transcending a deep crisis; rather, it concerns the push and pull of managers attempting to implement a new technology”. This statement would appear to suggest a concern for the social implications of implementation and it might therefore be argued that the data collection methods should concentrate on the very aspect Sviokla (1996, p.39) dismisses on the grounds of validity and reliability.

It is suggested that one of the major underlying weaknesses of developing a research methodology, particularly in social scientific research centres on this tension – that social research is sacrificed at the expense of a desire to be seen to be ‘scientific’.

4. Ethnography – A suitable research method

Having considered the problematic aspects of research in the field of knowledge and knowledge management, two main issues arise. Firstly, it would seem that that the scope of knowledge and its management has tended to focus on those aspects, which are readily explicated, to the possible exclusion of knowledge’s tacit elements. Secondly, in the conduct of research there would appear to be a degree of confusion between the development of a research design to its implementation. This second issue may impact upon the beneficial aspects to be drawn from the research.

One way to address these issues may be to adopt an existing methodological approach, that of ethnography. This form of research has been described as “a research process in which the anthropologist closely observes, records, and engages in the daily life of another culture – an experience labelled as field work – and then

writes accounts of this culture, emphasizing descriptive detail” (Marcus & Fischer 1986, p.18).

The roots of ethnography are to be found in anthropology. Traditionally, travellers wrote commentaries about ‘other peoples’, with the emphasis intended to bring out the difference of these other people. Therefore, the goal of ethnographic research was to “lay bare, from within, the logic that informs and organizes the collectivity’s life and way of thinking” (Alasuutari 1998, p.61).

Historically, ethnographic writing (Hammersley & Atkinson 1983; Thomas 1993; Van Maanen 1995; Wolcott 1999) has acknowledged the importance of Malinowski’s (1922) “Argonauts of the Western Pacific” in the formalisation of rules for undertaking ethnographic research; developed to facilitate the use of a rigorous approach to the application of ethnographic methods used in field work, in the same way as occurred in scientific research. In order to meet the rigour of scientific research, Malinowski (1922) believed that it was necessary for the researcher to explain how the material had been collected and the results presented. In essence, this required the presentation of an account of the research process in addition to the presentation of the data obtained. Additionally, it was important that the theories and interpretations of the researcher were kept separate from the raw data, i.e., the observations and what people said. Another feature highlighted by Malinowski (1922) was the importance of participant observation. The rationale for this was the perceived need to remain in the background to eliminate the effect that the researcher’s presence had on the object of study (at least in theory).

However, it may be argued that this is simply not possible given the type of research being conducted or given one’s attitude about the interaction between the researcher and that which is being observed. In more recent research, e.g., in the area of ethnomethodology, the idea is to uncover the hidden assumptions of people’s lives by challenging them, or as Alasuutari (1998, p.67) states, the aim is “to explore and make visible the taken-for-granted rules of interpretation that people use in their everyday life as well as the collectively shared assumptions on the basis of which we make sense of different interaction situations”. The purpose of this is that it would allow the reader to determine how reliable the researcher’s work was and thus the ‘validity’ of the researcher’s conclusions based on the material obtained.

There are parallels with understanding tacit knowledge. Drawing on Polanyi’s (1966)

contention that “we know more than we can tell”, ethnography may offer a methodological research approach to uncover the tacit elements of knowledge more fully. This is because it is an area that researchers find the most intractable due to the difficulty in explaining that part of knowledge, which is experiential or cultural for humans.

Ethnography, as a method of conducting research, appears to exhibit certain characteristics. Firstly, it seems rooted in observation of ‘others’ as evidenced by its development from travellers’ tales. Secondly, the research undertaking is based on the researcher dwelling with this other culture and observing and participating in the lives of the ‘others’. Finally, in the presentation of the research, it is deemed necessary to explain not only the data obtained, but also the means used to collect data. Based on these requirements, it is useful to look in more

detail at the ethnographic research methodology, in particular, in light of the transposition of its use in other research areas and within the overall context of research methodologies.

Ethnography is not a perfect method for the implementation of a research design. Arguments still persist about its adequacy and validity. These arguments have tended to focus on two aspects. Firstly it is argued that ethnography lacks scientific sufficiency. Secondly, it is argued that ethnography has failed to separate itself sufficiently from qualitative research (Hammersley & Atkinson 1983, p.6). In order to consider these criticisms; it would be beneficial to reflect upon Fig. 3 (aforementioned at p.8). Having contended that it is a necessary part of the research design to construct a model thereof, reflecting the philosophical underpinning; Figure 4, below, represents a refinement of Fig. 3 as it relates to ethnographic research.

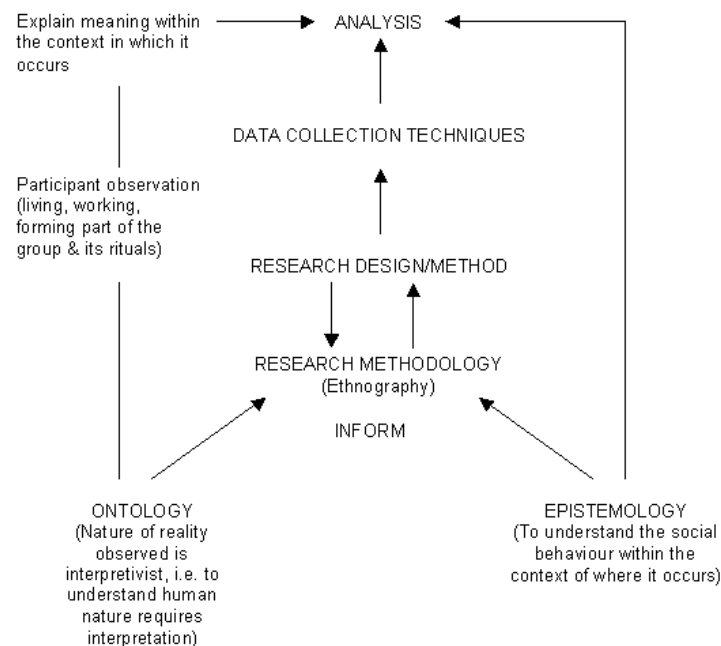


Figure 4: Ethnographic research method

From Figure 4, it is evident that ethnography, although subject to criticism, appears to offer some continuity between theoretical and practical application of a research design. However, focusing more closely on the arguments, referred to supra, the main thrust in countering a lack of scientific rigour appears to have centred on ethnography’s unique empirical phase. Ethnography has responded to these criticisms in a number of ways. Firstly, it has been stated that ethnography is a method of social science research better suited to understand human behaviour than other methods because of its “processual and meaning-laden character”

(Hammersley & Atkinson 1983, p.7). Secondly, social science has tended to try to mimic natural science, but ethnography is distinct. Ethnography is concerned with a different kind of science from that of natural science. Unlike natural science, ethnography focuses on both the general and unique. Rather than simply describing human behaviour, it is concerned with ‘understanding’ and interpreting human behaviour. Thus as Evans-Pritchard’s (1962) argues, human behaviour, as a manifestation of culture, always requires interpretation. Underpinning this is the assumption that human society can be better understood through the use of interpretation, than

reliance upon quantitative methods? The basis for this is that quantitative methods do not manage to capture human social behaviour because of their reliance on that which can be reduced to observation, within an artificially created experiment. Ethnography in contrast entails observation and living within a social collective.

Thus, ethnography makes certain assumptions (akin to ontological and epistemological underpinning of research). These can be summarised as the beliefs in naturalism, understanding and discovery. Naturalism is based on a particular view of social research, which states that the only way to capture human behaviour is to do so in a natural setting rather than in 'unnatural settings' that might be created for the purposes of experimentation. The corollary of this is that within the 'natural' setting, the researcher tries to lessen their own impact to heighten the neutrality of the research undertaking. The third aspect of naturalism is the contention that to explain social phenomena, it must be done within the context within which it occurs.

At the heart of the second premise (understanding) is the view that the way people behave differs from behaviour in the physical world. In the physical world, it is believed that observation will produce a series of fixed responses dependent upon stimuli. However this does not necessarily apply to the social world. Instead it is contended that in the social world, stimuli are interpreted and responses (plural) are constructed. Taken to its natural conclusion, this would result in a rejection of the concept of causality in the social world. However, ethnographers do not wholly reject the principle of causality – rather there may be causal relations in the social world but these are not conceived in the same way as those found in the physical world. As part of the process of interpretation, it is argued that it is necessary to understand the culture of the group in order to produce the interpretations for the behaviour of the group members. Therefore, participant observation provides a method that produces a more 'in-depth' understanding of culture and human behaviour. In relation to discovery, ethnography takes a fundamentally different stance from traditional scientific research. Scientific research appears to be premised upon the basis of hypothesis testing. Ethnographers favour an approach, which requires a rejection of this limitation; rather it tries to "examine a type of social phenomena and/or [consider] some theoretical issue or practical problem" (Hammersley & Atkinson 1983, p.15). The argument for this is that hypothesis testing narrows the focus of the research issue to the

extent that it may result in missing the true nature of the phenomena.

Does ethnography fall between two stools? It has been argued that ethnography lacks scientific sufficiency. Ethnographic writing may tend to use terms such as 'frequently' and 'often', lacking in precision. Thus, it fails to adequately quantify phenomena as words like 'frequently' and 'often' are used in an imprecise way and it has been accused of being "impressionistic" (Hammersley & Atkinson 1983, p.10). Ethnographers reject this on a number of levels. Quantification, per se, has not been rejected and some ethnographic accounts include their use. However, it is not necessary, because if a difference is large, then figures do not require to be stated precisely with any loss of meaning. The danger is that in being too precise, the claims made cannot be justified and quantification can just as easily distort in the same way as a lack of precision, based on the measurement techniques utilised.

By the very nature of the ethnographic research process there is an inbuilt bias because of the lack of structure to interviewing, i.e., no formal/structured interviews, and this undermines the ability of other researchers to replicate findings. As has been stated earlier, ethnographers acknowledge the role of the researcher in the research process. Secondly, all knowledge is in some sense social and cultural and cannot be isolated out of the research process and is, therefore, inherently bias laden. Finally, by accepting that the research process is not neutral, it may be argued that science is subjective. We all react to the structure we impose upon our research and thereby predetermine its subjectivity, e.g., I ask the same question at the same point in an interview as you did; it is still subject to interpretation, either yours or mine. Thus, ethnography accepts that it is interpretive and not merely neutrally observational. This is in contrast to much of the natural sciences where the belief is that you observe and neutrally describe what you observe.

Ethnography as a method of research to better understand tacit knowledge also potentially aids knowledge management in practical terms. It offers both an in depth approach to better illuminate the contextual nature of tacit knowledge and is underpinned by a theoretical basis for the appropriate conduct of research.

5. Conclusion

The fundamental premise of ethnographic research posited here rests on the belief that, as a research methodology, it is unproblematic if it is

accepted that ethnographic research represents a different kind of science from that of the natural science. In essence, if it is accepted that ethnography is a research design based upon different ontological and epistemological foundations, then why should it require to adhere to those suited to the natural sciences? This leads to the fundamental question at the heart of the utilisation of the ethnographic method as a way of developing research in knowledge and knowledge management.

Part of the discontinuity in knowledge management research may be due to the fact that, whilst acknowledging tacit knowledge's importance, research has tended to focus on explicit knowledge as it offers a more easily encapsulated view of knowledge and is easier to

manage than people's insights, values, culture or experience. It may be because there has been a lack of an agreed view about what constitutes an appropriate research methodology, which would enable a greater discussion of how to manage tacit knowledge. The answers to these propositions are not presented here. Rather, a suggestion is made – whatever the facets of tacit knowledge may be; they are, in some sense, inextricably bound to Polanyi's (1966, p.18) view that 'we know more than we can tell'. It is suggested that Polanyi identified self knowledge, i.e., that which is within us, and alluded to the knowledge that is part of a group, socially and culturally bound. It is contended that ethnography presents a research methodology to illuminate these aspects of 'knowing more than we can tell'.

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