



Role of Ethnography in Research in Computer Application

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ABSTRACT : Ethnography is description of people or culture and record data about the culture being studied. Ethnography is undertaken in order to produce a theory or it can be served as a test-bed for theories. For ethnography, researcher uses different data generation methods like interview, observation and field notes. In ethnography research, researcher prefers field notes which contain substance, methodology and analysis which acts as a source of evidence and a basis for data analysis in the writing up of the ethnography. Type of ethnographer to be selected is a choice of researcher. Ethnography is said to be successful, if its readers are able to understand the activities of people in other culture and see that they make sense within the context of that culture. By applying ethnographic methods in computer application requires a careful design so that they are implemented correctly and important aspects are highlighted in the results.

Keywords : *Research, Action research, ethnography, types of ethnography, computer application*

1.Introduction : The word ethnography is originated from the word anthropology means description of people or culture. When a new culture is being learned, it is called as

ethnography. Ethnography research is widely used in social science, sociology, political science and educational science. Ethnographic research method is a qualitative empirical approach suited to understand people and culture and their associated social and work practices. In the context of computer applications, ethnography is used within the Computer Supported Cooperative Work (CSCW) to conduct studies of the workplace [1]. The main aim of ethnography is to understand and study culture about the people. Ethnographic researchers gather and record data about the culture being studied. Ethnographer also uses other forms of field study such as observational study, case study and fieldwork. Ethnography is hardly used in empirical computer applications environment and has limited experience. Also there is little support in the literature for applying ethnography in the areas of computer applications. Easterbrook et al [2] emphasize that ethnography aims to understand culture of a community, or an organization or a team, but they don't explore the potential that understanding such culture is for improving software practice. Ethnography takes an empathetic perspective, where researcher gains insight into social and work practices. Also ethnography provides an analytical focus that allows why the things are done the way they are and also allows what is done in practice. This provides a valuable opportunity in the context of

computer applications, since capturing both the ‘what’ and ‘why’ of practice provides a solid foundation for identifying sustainable improvements. Software engineers are in a unique position to be able to adopt the role of a participant observer . They are able to feed back valuable insights and practical consequences into software practice [3]. The ethnographer can get a better understanding of the informants’ work by considering concerns, frustrations, expectations and preferences. He is also able to identify aspects that are more interesting, relevant and worth exploring for the informant. The deployment of ethnographic methods will provide a strong foundation to build the software development practices . It also provides a base to develop and devise adequate processes, tools and techniques [5]. In computer applications, the aim of ethnographic study is to observe activity, to determine rationalities and explanations and makes the team work well. By considering this, author tries to explore characteristics of ethnographer, participant or non-participant observation, ethnography in computer supported cooperative work, success of ethnographer and evaluating ethnography based research.

2. Characteristics of Ethnographer :

The characteristics of the ethnographer includes the following : [4,6]

- i. Ethnographer acts as a participant observer. Ethnography takes place in natural setting of the subjects .
- ii. The process of ethnography act as a research instrument as data generation method where researcher can prepare personal field notes, and can note his personal experience.
- iii. The ethnographer tries to construct a representation of the

world as perceived by the people who live in that world .

- iv. The ethnographer tries to produce a holistic description of the culture which includes social, cultural and economic aspects of the situation .
- v. A true ethnography will provide an analysis of the results explaining how this evidence is or not for a particular purpose. It also present the evidence acquired in the field.
- vi. The results obtained with an ethnography are realistic, have high internal validity and have weak external validity.
- vii. The results of an ethnographic study are suitable for analytical generalization, but not suitable for statistical generalization.
- viii. Researcher looks for patterns of the group mental activities, their ideas and beliefs expressed through language or other activities, and how they behave in their groups.

3. Participant or Non-participant Observation in Ethnography :

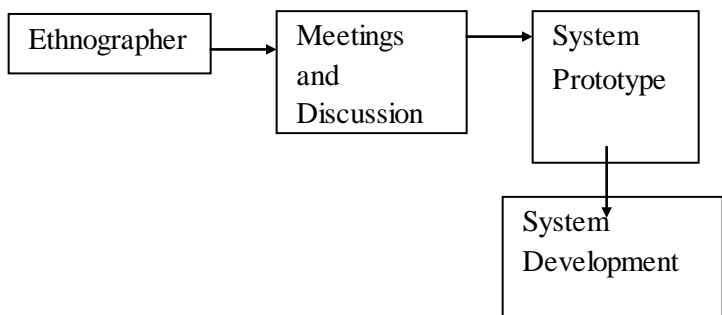
Observation is key to ethnographic studies and both participant and non-participant observation are legitimate forms of ethnography. Observation is almost always complemented with other forms of data collection such as interviews or document analysis.



Participant observation involves the researcher effectively performing the same actions as the informants . In contrast, non-participant observation involves the ethnographer observing the actions, but not necessarily doing them [7]. Participant observation can be impractical in a work-based situation such as software engineering as there are practical concerns about being able to perform all activities a professional software engineer would do in the field site. Participant observation in this context is more often interpreted as taking on a meaningful role within the community and engaging with the community's everyday business.

the deliberation of change and the exploration of methods, then the role of the researcher changes from a pure observer to an actor and sometimes even a change agent. By focusing on the situated implementation and adaption of methods, processes and tools in software practice leads to an understanding of how methods, processes and techniques actually influence that practice. It also helps to understand what specifically influences the interpretation and appropriation of methods, what makes them work and what prohibits their application. Ethnography puts cooperative, social and human aspects in the area of computer applications in the centre. So it is very well-suited to any research question focusing on these aspects [5] .

4. Ethnography in Computer Supported Cooperative Work :



Ethnographer and developers are the same stakeholders. Ethnographic research provides a unique opportunity to better understand the interaction between methods and the situated context of their deployment . He tries to use that understanding to improve the practice at hand, and the methods and processes adopted. Whatever ethnographer observes on a site, he discuss it in meetings. Accordingly system prototype is developed and then finally system is developed. If the researcher becomes involved in

5. Success of Ethnographer :

The success of ethnographer depends on the nature of researcher. It is difficult to decide and plan the sequence of tasks for designing and conducting an ethnography. The researcher need to be flexible to seize opportunities to learn which are present. Because of lack of defined procedures and no formal mechanisms , it is difficult for judging the accuracy of the ethnographer's result. Also it is difficult for the ethnographer to suspend belief which they grant in their own culture which is equally applicable in other culture. Ethnographers observe others and participate with them , and at the same time stand back and observe themselves . Ethnography is said to be successful if its readers are able to understand the activities of people in other culture and see that they make sense within the context of that culture. The ethnography can be studied on Internet, where researcher can find out online and offline activities around each other . Ethnography provide insight into aspects of social life, including perception and values, which other research methods are unable to capture. It also



develop a rich and valuable understanding of the cultural meaning of practices and interactions. Ethnographic methods can be successfully adapted to different contexts and used for unintended purposes. It can be used to study the introduction of new ICT System and how people respond and adopt it over long period of time . [4, 8].

6. IS and Computing Research :

Zuboff carried out research study on IT based systems in different organization and explored how these systems were altering perception about the nature of work, the dynamic of workplace, and appropriate management [9]. Trauth studied companies involved in production of hardware and development of software in respect of information economy and tried to explore interaction between cultural context and information economy [10].

7.Evaluating Ethnography Based Research :

Ethnography based research can be evaluated as it gives a detailed picture of a particular situation or work practices. The findings are based on natural setting and lives of the people studied. It can be used to study the institutional contexts of Information system and computing practices and all stakeholders and the human, social, organizational and technical aspects of information system development and application. The ethnographer also works to situate what they find in historical and local context . Further they try to identify the connections between their findings and the larger social forces and structures of society. A true ethnography will not only present the evidence acquired in the field, but will provide an analysis of the results explaining how this evidence is, relevant or not for a particular purpose. Ethnographic studies help to understand how and why software teams do the

things that they do like to organize themselves in a specific way.

It also try to study how activities are coordinated and how to apply a particular method . Further it also explores about the use of specific tools and techniques. It requires flexible data collection plans since an ethnographer is aiming to see the world from the members' point of view. In computer applications, ethnographic study help to understand why collaboration and cooperation support is important. It also helps to understand the details of the collaborative practices observed . In short in the era of digitization, ethnographic study can be used to study regarding impact of digitization of ICT on village respondents.

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