

Social Interactions in Electronic Networks of Practice: A Model for Effective Knowledge Construction, Problem Solving, and Learning

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ABSTRACT

Electronic networks of practice and research around this social web 2.0 platform has gained traction within the last few years with the advances in social media technologies and their proliferated use. Therefore, this article examined the types of interactions within an electronic network of practice open to those within the software engineering field. This research found that narrative posts, with certain aesthetically appealing qualities, can allow better social learning and interaction in network discussion forums, thereby enabling richness of knowledge constructed. The use of dimensional analysis a qualitative framework enabled this research to develop a model to gain a comprehensive insight into various factors that contributed to social learning within networks of practice.

KEYWORDS

Knowledge Construction, Narratives, Network of Practice, Social Learning, Social Web Interactions

1. INTRODUCTION

Knowledge essentially is when information is ‘given meaning’ through its interpretation by individuals (Tuomi, 1999, p. 105). Sharing and internalizing knowledge requires active interaction among individuals and storytelling has been identified as one of the ways in which knowledge can be preserved and used as a tool for problem solving and learning (Brown and Duguid, 1991). It is widely acknowledged that knowledge has a social element in its construction and is ‘embedded in some social collectivity and is subject to the cultural assumptions, practices, and power relations operating within that collectivity’ (Pentland, 1995, p. 3). Furthermore, if knowledge is embedded in a community and socially constructed, knowledge management systems should be developed to ‘enable discussion, mutual engagement, and exchange’ (Wasko & Faraj, 2000).

For individuals faced with the challenge of accessing and sharing knowledge, one of the best options for such exchanges is through online collaborative communication technologies. These involve IT platforms to enable an infrastructure for sharing, creation, dissemination and integration of knowledge (Alavi & Leidner, 2001; Kankanhalli et al., 2003). Virtual or electronic networks are just some of the computer-mediated knowledge systems that enable knowledge collaboration. They essentially facilitate contact between the person seeking knowledge and those who may have access

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to the knowledge and can be either formal or informal depending on the virtual platforms in which communities congregate. The social interactions among a virtual online group can sometimes be situated in the context of a particular practice; this determines the nature of learning and the sharing of knowledge. New meanings are negotiated and new knowledge is constructed through a social process, by drawing on, perhaps disputing and adding to existing explanations and practices (Gold & Watson, 2001). This social process among a group and the language used between them becomes valuable when analysing social learning.

The research gap of this study is determined by the limited number of studies that analyse the types of social interactions on virtual networks (Weeks & Veltry, 2013; Escobar et al., 2014; Geiger & Schreyogg, 2012; Case & Piñeiro, 2006). Studies simply look at the interactions occurring as problems and solutions or questions and answers posted. There is very little regard for the fact that the problems or questions presented on virtual networks are quite often detailed or terse narratives of past or present experiences (Case & Piñeiro, 2006). There are also very limited studies that address learning on networks or virtual communities, particularly studies that address how narrative interactions can contribute to the learning process.

Therefore, the objectives of our research is two-fold:

1. To develop a greater, more comprehensive understanding of the social interactions involved in facilitating learning and problem solving in online contexts;
2. To identify if narrative posts facilitated better interaction and which specific types of interactions were valuable to learning.

These two objectives are to essentially recognize the social interactions that contribute to problem solving and learning on virtual networks of practice and identify how narratives facilitate this process. Also, we want to know the qualities of posts that compel people to participate in the learning process. This could also potentially enable us to know how to write high quality posts in virtual networks so that others engage in meaningful discussions.

To achieve the objectives of this study a constructivist methodology was adopted. We analysed a specific network of practice and through the use of dimensional analysis as a framework of analysis (Schatzman, 1991) we were able to build an explanatory matrix that gave a comprehensive explanation of the process which takes place when participants collaborate on networks of practice. Our explanatory matrix details the various dimensions that contribute to the learning process; from the interactions between participants to the narratives and their qualities. a constructivist methodology to develop the explanatory model.

Consequently, the article has been organized as follows; first we will introduce the literature on electronic networks of practice, and then specifically address literature on collaborative learning in online environments while discussing how knowledge is contributed, exchanged and constructed using the developed explanatory matrix. Finally, we will address the various properties and characteristics of narratives and discuss literature on how narratives can be used in the learning process in online environments.

2. LITERATURE REVIEW

2.1. Electronic Networks of Practice (ENOP's) and Social Learning

Community of practice was a concept first introduced by Wenger and Snyder (2000) and involves tightly interlinked groups of people who know one another and seek to provide personalized tacit knowledge exchange. Furthermore, Wenger (2010) reveals how these communities are the spaces through which social learning manifests. Wenger (2010) also exposes how engagement with others, constructing an image of one's self within the community as well as aligning one's self to the

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