

Chapter 5

Applying Social Network Analysis and Social Capital in Personal Learning Environments of Informal Learning

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ABSTRACT

Recently, researchers in the instructional technology and learning sciences arenas have started to pay attention to the concept of Personal Learning Environments (PLE). With the aim to investigate how social network theory could indicate the desired indicators for successful Personal Learning Environments, the authors are addressing social capital theory as a conceptual framework to understand the network landscape within informal learning environments. Social capital is an inherent property of network and collaboration dynamics, along with key indicators related to personal network measurements. Personal network analysis as a means to evaluate the social capital is discussed later in this chapter. This chapter is not about learning what or learning as becoming, but about how people learn with whom, and with what degree of influence. It will be helpful to educators or researchers who are interested in measuring academic and psychosocial outcomes within the presence of social capital when applying personal social network analysis in personal learning networks.

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INTRODUCTION

The Personal Learning Environment (PLE) concept has emerged as a label associated with the application of the technologies of Web 2.0; yet, there has been little agreement on which theory could guide the investigation on the ecology of networks that constitutes the Personal Learning Environments. No coherent model has been established or introduced to analyze the key indicators, relationships, or ties, and networks in a Personal Learning Environment. This chapter introduces a network-based social capital theory, which increases our understanding of how people learn with whom, or how people learn to be contributors to local and global society with some degree of influence in Personal Learning Environments. More importantly, we seek to address the following question: how could the frequent utilized or naturally occurring socio-technological features be best incorporated into the Personal Learning Environments.

PERSONAL LEARNING ENVIRONMENTS

The concept of Personal Learning Environments has been advocated by computer scientists in the United Kingdom from the network perspective since the late 1990s (Johnson & Liber, 2008). It has recently become significant in learning and teaching research and in professional development research (Ross & Welsh, 2007). Especially in teachers' education, major researchers have devoted time to better understanding the phenomenon of the Personal Learning Environments in order to help teachers build their efficacy of using technology as well as to build their own developmental pace (Ross & Welsh, 2007).

Personal Learning Environments (PLEs) allow learners to control their own teaching and learning environments (Greenhow, 2011). The Personal

Learning Environment supports both completely individualized, personal life-long learning efforts and trajectories, and learning within more structured learning contexts (for example, courses at an institution) where there is some organized or facilitated activity (Severance, Hardin, & Whyte, 2008). However, Personal Learning Environments differ from online course management systems. The online course management systems normally have very well structured platforms with specific tools or applications provided to the designated institutions (Wilson, Liber, Johnson, Beauvoir, Sharples, & Milligan, 2007). At the same time, learners in their own Personal Learning Environment can construct the tools of their choice by taking advantage of the growth of the Web 2.0 applications. Personal learning environments also differ from online communities of practice, which provides a virtual space where a group of people share an interest or a profession and localize new information based on their personal needs and living environment (Gray, 2004; Reverin, 2008). Wenger (2006) proclaims, "communities of practice enable practitioners to take collective responsibility for managing the knowledge they need, recognizing that, given the proper structure, they are in the best position to do this." Likewise, while both the Personal Learning Environments and the online communities of practice provide benefits for informal learning (Greenhow & Robelia, 2009a), learners are permitted to interact more loosely within Personal Learning Environments than within communities of practice.

In a Personal Learning Environment, learners would utilize a single set of tools, customized to their needs and preferences, inside a single learning environment. People, tools, communities, and resources interact very loosely within these personal learning environments. Learners are enabled to construct the environment for themselves, in part, by deciding upon: the tools they choose, the communities they start and join, the resources they assemble, and the things they

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