

## Chapter 3

# Case Studies from the Inquiry Learning Forum Stories Reaching Beyond the Edges<sup>1</sup>

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### ABSTRACT

*Two intense case studies were done of teachers using the Inquiry Learning Forum (ILF), an online space for professional development in inquiry pedagogies. Major findings included: The ILF initially conceived as an online professional development tool in the form of a Community of Practice (COP) was reconceived as an electronic tool within a larger space that included the online tool but also many co-present spaces pertinent to a teacher's practice of inquiry pedagogy. These case studies also demonstrated the transformative nature of teachers engaging in a COP. Not only is the teacher changed but also the COP is changed by the practice. The cases demonstrated the need for teachers to feel disequilibrium in their practice before they are willing to engage in change of those practices. Lastly immersion in practice described as The Pedagogy of Poverty hampered one teacher's progress in the ILF. These findings are based upon my empirical observations with the backdrop of John Dewey's Theory of Inquiry and of Etienne Wenger's concept of communities of Practice. Future trends in using online COPs for professional development need to look at practice in these terms where allowance for transaction, support outside the electronic space, and disequilibrium are considered.*

### INTRODUCTION

The concept of Community of Practice (COP) as a source for professional development, although originating from examples within industrial practice (Lave, 1991; Wenger, 1998; Wenger, 2002), has

gained wide interest within educational contexts in the United States (Preece, Maloney-Krichmar, 2005). The continual development and improvement of digital technology has allowed the deployment of experiments in COP to be preformed online. One such project that originated at Indiana University in Bloomington, Indiana and was funded by the National Science Foundation was the Inquiry Learn-

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ing Forum (ILF), a large-scale project meant to promote the use of inquiry pedagogies among math and science teachers in the state of Indiana via an online Community of Practice<sup>2</sup>. This chapter reports on extensive case studies of two teachers who were involved with the ILF in order to provide information on a topic that is often scarce in studies of online professional development. The question was “How did the ILF affect the teaching practice of participants?”

It is a truism that you do not know what case studies will yield until you collect your data and analyze them. That truism is supported by these studies. I started with the goal of discovering through case studies how the ILF affected the teaching practice of some of the actively participating in-service teachers. I soon had to revise my research question to “How do teachers transact with the ILF with particular reference to their teaching practice?”. This change resulted from watching two teachers modify the ILF as much as the ILF modified them. It also resulted in a re-conceptualization of the ILF into an e-ILF or the actual electronic space and the greater ILF or the larger space of teacher engagement including their classrooms, meetings with other teachers, parents, the professional organizations of their field, state standards of learning, and their supervisors.

In this chapter I begin by giving an overview of the motivation for the ILF, my studies of the ILF, and some concepts involved in these studies such as Communities of Practice, differentiating the electronic ILF from the entire ILF, A Deweyan Theory of Inquiry, and Pedagogies of Poverty. I then present the methodology for the case studies, and an in depth view of the case studies. I continue by discussing the case studies in relationship to the theoretical concepts and conclude with future trends for online professional development using online COPs and I finish the chapter with a summary of my conclusions.

## **MOTIVATION FOR THE ILF**

The ILF was designed with the need for providing teacher professional development that promoted inquiry pedagogies against a background of a steadily improving Internet access for teachers and against a background of U.S. students losing ground in math and science on an international basis (American Association for the Advancement of Science, 1991; U.S. Department of Education, 1999). A needs analysis of a small sample of science and math teachers in Indiana, U.S.A. showed that these teachers wanted to visit the classrooms of teachers who already had proficiency with inquiry pedagogies but their busy schedules prevented them from doing this (Barab, MaKinster, Moore, Cunningham & The ILF Design Team, 2001). This needs analysis resulted in the design of the ILF where teachers could virtually visit classrooms of other teachers and then interact with the demonstrating teachers about their teaching within non-synchronous threaded discussion forums.

## **STUDIES OF THE ILF**

In creating and supporting an online site for teacher professional development there were many difficulties including motivating teachers to feel ownership and thus participate, instilling trust in teachers that their online words would not be used against them, and being able to determine the effectiveness of the online tool (Barab, MaKinster, & Scheckler, 2004). The case studies described in this paper were an attempt to determine the effectiveness of the ILF albeit a deep and narrow determination since it is difficult to find the resources to do very many of these in depth case studies. However the extreme benefit of them was to discover issues of teachers' practice that researchers had not foreseen.

In the United States there has been some great success in using online professional development tools but not the universal adoption that admin-

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