Chapter 9

On the Implications of the Social Web Environment for Pedagogical Patterns

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ABSTRACT

This chapter explores the impact of the Social Web in enabling human-to-human communication during the production and management of patterns. To do that, two conceptual models, one aimed towards understanding the stakeholders of patterns, and the other for a pattern production process are proposed. The role of the stakeholders in carrying out the different workflows of a pattern production process is elaborated. In doing so, the prospects and concerns presented by the technologies/applications underlying the Social Web are highlighted.

ON THE IMPLICATIONS OF THE SOCIAL WEB ENVIRONMENT FOR PEDAGOGICAL PATTERNS

The reliance on the knowledge garnered from past experience (May & Taylor, 2003) is crucial for any development. In the past couple of decades or so, one form of conceptually reusable experiential knowledge (Kamthan, 2010), namely patterns, has been discovered and applied in a variety of educational settings including teaching computer science in high schools (Haberman, 2006), blended learning (Köhne, 2005), electronic learning (e-learning) (Derntl, 2005), forming study groups (Sharp, Manns, & Eckstein, 2006), carrying out course projects (Hayes et al., 2006), and soliciting feedback from students (Bergin, 2006). Indeed, patterns can be useful as a pedagogical

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tool/learning aid by which experts can convey successes and failures of their experiences to novices (Bennedsen, 2006).

If a pattern is viewed as a product, then the underlying process and especially the people involved in its realization are an important consideration. In particular, effective communication across the pattern community is crucial. This, in turn, calls for a convergence of the social and technical environment underlying the production and management of patterns.

The Social Web, or as it is more commonly referred to by the pseudonym Web 2.0 (O’Reilly, 2005), is the perceived evolution of the Web in a direction that is driven by ‘collective intelligence,’ realized by information technology, and characterized by user participation, openness, and network effects. If the original Web, or Web 1.0, is about connecting information, Web 2.0 is about connecting people. The Social Web technologies, applications based on those technologies, and tools for managing both, constitute the Social Web environment. This chapter explores the potential of the Social Web environment in enabling the communication channels necessary among the members of the pattern community in general and the stakeholders of patterns in particular during the production and management of patterns.

For the sake of this chapter, the term communication is used in the sense of semiotics (Chandler, 2007). Furthermore, Social Web technology and Social Web application are considered to be different concepts, and Social Web applications are considered to be a sub-class of social software.

The rest of the chapter is organized as follows. First, the background and related work necessary for the discussion that follows are outlined. This is followed by an analysis of the technologies/applications underlying the Social Web in different facets of the production and management of patterns. Next, challenges and directions for future research are highlighted. Finally, concluding remarks are given.

**BACKGROUND**

This section presents the necessary terminology specific to patterns and a perspective on related work. It also highlights certain limitations of the current media towards communicating patterns.

**An Overview of Terminology on Patterns**

There is currently no single source or ‘standard’ for terminology related to patterns. Therefore, for the necessary terms and their definitions, this section relies on selected publications (Appleton, 1997; Buschmann, Henney, & Schmidt, 2007; Coplien, 1996) that can be considered as authoritative.

A pattern is an empirically proven solution to a recurring problem that occurs in a particular context. A pattern description is a set of indicative statements that specify a pattern. A pattern description, if structured, typically consists of a number of elements. A pattern form is a prescription of a specific set of pattern elements that are expected to appear in a pattern description. A pattern form consists of an ordered list of labeled elements, such as, (pattern) name, context, problem, forces, solution, examples, and resulting context. The labels of elements can vary across collections of pedagogical patterns (Derntl, 2005; Retalis, Georgiakakis, & Dimitriadis, 2006; Sharp, Manns, & Eckstein, 2006) and other (optional) elements, such as those related to meta-information, may be included to enrich a pattern description. It is this structure that makes patterns more than a mere collection of ‘problem-solution’ pairs, and makes them unique among other kinds of experiential knowledge such as principles, guidelines, and heuristics. A pattern is usually referred to by using its name. In this chapter, the name of a pattern is presented in uppercase in order to distinguish it from the surrounding text.

For practical reasons, it may not be feasible to provide a single solution to a large problem. In such a case, the problem is partitioned into a...
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