Chapter V

Giving Learners a Real Sense of Control Over Adaptivity, Even If They Are Not Quite Ready For It Yet

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Abstract

This chapter describes Tutor3, the latest in a sequence of systems that we have created to provide adaptation of hypertext where the user can maintain a real sense of control over the adaptivity. In Tutor3, the user always has access to precise details of what has been adapted to them, how this adaptation is controlled, and they can alter it. We describe both the user’s and the hypertext author’s view of the system. We then report a qualitative evaluation of the system in terms of the ways that users were able to understand both the adaptation and their power to control it. We conclude that while users do expect adaptivity, they do not expect to be able...
to control it. We discuss the challenges this creates for building adaptive systems that users can control effectively.

Introduction

Adaptive hypertext, at its best, offers the promise of a personalised document and interaction that meets the individual’s particular preferences, knowledge, and goals. There are many situations where this could be of immense value. For example, consider the case of hypertext learning environments. These offer potential improvements in learning outcomes if they deliver some of the benefits that appear to be achievable in one to one tutoring (Bloom, 1984). Equally importantly, users who have sensitive information needs may appreciate it if this is personalised. For example, in an evaluation of adaptive presentation of information for patients with cancer (Cawsey, Jones, & Pearson, 2000), there was a strong preference for the adapted version of the information.

While personalisation has the potential to offer considerable benefits, it also has some serious problems. In this chapter, we are particular concerned with one class of these. They are associated with the potential for adaptive systems to be unpredictable and irritating because the user is unable to determine what is adapted, how that adaptation is controlled and how they can manage the personalisation processes. Users may be surprised or irritated by systems that are “too smart”. Users may be subject to the hunting problem, where the system and the user simultaneously attempt to adapt to each other (Browne, Totterdell, & Norman, 1990). It is also quite possible that the author of the adaptive hypertext system has made a mistake, such as providing copious detail when the user has asked for minimal information. This could be due to a simple coding error where a single “not” was omitted or incorrectly included.

To delve into this issue, we first need to identify the core elements of an adaptive hypertext. While these will vary across systems, they would generally include the following four elements.

- A user model is an essential part of an adaptive hypertext system since it is the system’s knowledge of the user and is the driving force determining exactly what is adapted and how. The user model may be very simple, perhaps a set of Boolean flags or an arbitrarily complex representation.
- The adaptable content. This might be as simple as text snippets, each of which is either selected or not for a particular user. At the other extreme, it may be a complex knowledge representation.
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