
Chapter V

Heuristic Evaluation of Web-Based ODL Programs

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ABSTRACT

In this chapter we describe the evaluation of Web-based open and distance learning programs in a more technical manner. First of all we discuss some general theoretical issues that are of importance regarding Web-based ODL environments, such as the communication channel between the participating entities, the issue of learnability and the overall evaluation of such an environment. Then we introduce the principles of educational evaluation, of interface evaluation in general and of expert-based approaches in particular, and we compare the empirical and expert-based methodologies. Finally we present the heuristic evaluation, in its initial form as well as in its Web-adapted variation. The main objectives of the chapter are to prove the applicability of the method in the Web in general and in ODL environments in particular and to investigate the appropriate heuristic list, which can assess the usability and the learnability of such an environment.

INTRODUCTION

The rapid establishment of third-generation distance learning environments, the so-called Web-based or tele-teaching environments, brought some problems with it. The main means for the delivery of the new educational approach is the World Wide Web, and there are some good reasons for it: It is easily accessible by many groups of learners. It supports multiple representations of educational material and various ways of storing and structuring this information. It is powerful and easy to use as a publishing medium. Additionally, it has been widely accepted that the hypermedial structure of the Web can support learning. Some researchers characterize the Web as an active learning environment that supports creativity. In addition to this, the Web encourages exploration of knowledge and browsing, behaviours that are strongly related to learning. The associative organisation of information in the Web is similar to that of human memory, and the process of information retrieval from the Web presents similarities to human cognitive activities (Tselios, Avouris, Dimitracopoulou, & Daskalaki, 2001). However, a hypermedial space, like the Web, cannot be considered, only by these features, as an effective tutoring environment. It is rather more appropriate to think of the Web as a powerful tool that can support learning, if used in an appropriate way. This is because learning is a process that depends on other features, such as learner's motivation, previous experience and learning strategies that the individual has been supported to develop, etc. Effectiveness of any educational environment cannot be considered independently of these aspects.

BACKGROUND

The theoretical foundation and the basic principles of distance learning, of open learning and of adult education are not within the scope of this chapter. In this chapter we preassume the knowledge of these principles, and we are mainly interested in examining evaluation methodologies that concern the Web-adapted form of ODL, the so-called distance learning environments of the third generation. However, in order for an inexperienced ODL reader to be able to follow the chapter, we provide the principles of ODL, in a very concise form, with very few comments:

1. An ODL environment has to provide students with spatial freedom, temporal flexibility and the possibility to "tailor" the educational shape to one's own needs. In addition, it has to be flexible enough so that every student may profit by his/her own skills and abilities, utilise his/her previously developed idiosyncratic characteristics (cognitive, social or emotional) and apply his/her previously gained experience and expertise.
2. The instructional material needs ad hoc preparation: Targets and expected results must be stated, keywords must be provided, and a review must be present at the beginning and the end of every chapter. Knowledge units must be small and concise, explanation of difficult and important parts must be

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