Web seeking expertise: A review of the key factors and a proposal for efficient educational methodologies

WEB SEEKING EXPERTISE: A REVIEW OF THE KEY FACTORS AND A PROPOSAL FOR EFFICIENT EDUCATIONAL METHODOLOGIES

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ABSTRACT

Lifelong learning and achieving success in the Information Society is related to the ability to access, select and manage online information: Web seeking activities occupy a central position. However, as studies have pointed out, effective searching is a complex task for many users.

Some preliminary results about the factors involved in Web seeking will be presented to elicit a discussion on how to improve the development of student strategic performances. This short paper propose effective educational practices based on the importance of reflective learning for students own mental models as key factors in Web seeking expertise.

KEYWORDS

Information Society, Lifelong Learning, Web Seeking, Strategies, Mental Models, Educational Methodologies.

1. LIFELONG LEARNING WITH INFORMATION SOCIETY TECHNOLOGIES

The Information Society has revolutionized lifelong learning, bringing with it new technologies and potential especially through the Internet. Nowadays, learning and succeeding in the Information Society is related to what a student knows about how to learn and capture Web information: gathering relevant information and generating knowledge from online information. However, Web seeking is a complex activity in which students of the next generation will have to develop key strategic performance to gain expertise in seeking process. This approach raises important challenges to educational systems, which must focus learning processes, much more than their learning contents.

2. WEB SEEKING EXPERTISE

The ability to access, select and manage online information is today a key competence whose processes are not easy to resolve and are influenced by diverse factors.

Strategic approaches proposed by various authors such as Tsai & Tsai (2003) and Liaw & Huang (2006) aim to offset some of the principal informational problems, providing planning and self-regulation activities to achieve Web seeking activities with success. Despite the importance of these practices, strategic performance necessitates a step forward: a deeper insight which puts the student closer to reaching the expertise required. An approach to answer that would have to take into account the intervention on the mental models that students are maintaining about factors and situational conditions around the whole Web seeking process.

Current difficulty of Web seeking practices has developed a growing number of studies which have been focused on these activities, and in the interacting factors along the process (Jansen & McNeese, 2005). To understand the complexity of this process we can separate into three categories (Fuentes & Hernández, 2006): the search task, the searcher or the searching user, and the search technology, each ones with different variables in interaction. Controlling and monitoring some of these aspects can lead to strategic and succeeding performances, although according to Savolainen & Kari (2006) managing with all its dimensions can cause overwhelming or failing in Web seekers. Thus, students need to be given the opportunity to think and reflect *with* and *on* their thoughts about knowledge, experiences and attitudes. This means that, they need to make explicit the understanding of the task, as well as the situation and the consequences of their performance, all of which belongs to mental models field.

Students have to know how interact with the search technology and with the search task, and also manage their internal context resources, by means of applying the necessary knowledge and procedures to accomplish the task. From these representations brought are going to be set predictions and expectations about what kind of online information has to be found, how it will be developed in the seeking process and what kind of responses are expected from the search system. Finally, interactions between the understanding framework, predictions and the factual performance will give feed-back to the process, modifying goals, expectations, procedural and knowledge. It is in this point where educational purposes take relevance, due to students managing their own knowledge about the task and using them to feed-back into the seeking process by changing the topic or refining their queries interactively.

From our viewpoint the act of making explicit the student's mental models could not only avoid some seeking problems -information overload, crossroad, getting lost or unable to define relevant information; but also support meaningful learning with technologies.

3. PROPOSAL OF EFFICIENT EDUCATIONAL METHODOLOGIES

As shown in Figure 1, Web seeking expertise is an interactive process which depends on three main strategic factors, that themselves depend on situation specific mental models adopted by users, and most importantly on the educational practices which show people how to learn by means of reflection, planning and reviewing.

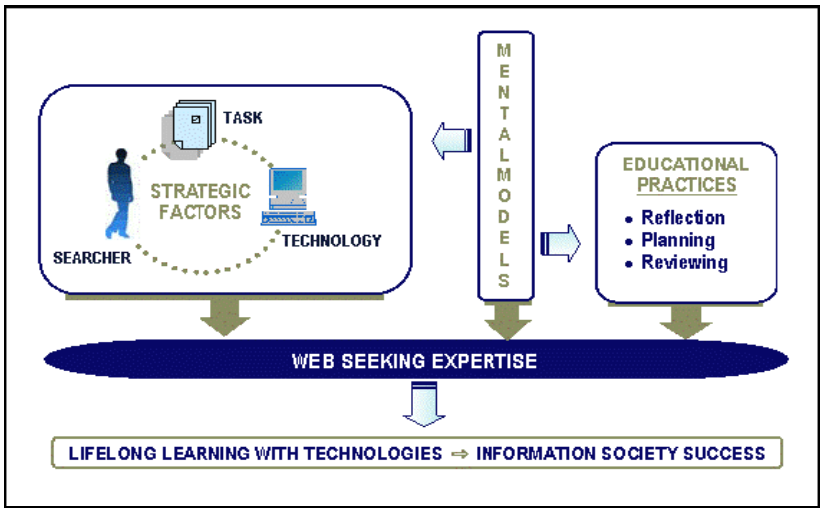

Figure 1. Web seeking expertise

Educational contexts have the important task of making students' mental models explicit, promoting meaningful and accurate models to interpretation and reasoning about what is unknown or new when they are searching on the Internet.

Seeking practices have to be based on letting students express and bring reflection about their mental models on the three strategic factors and their variables involved in, and most important, on their mental models about how search effectively. Thus, educational practices need to be centered on encouraging students' control about reflection of those representations which lets them to face up to a situation, afterward planning and review new representations. Examples of reflective activities can be all kinds of exercises of autonomous elicitation as aloud thinking, or writing owns perceptions and attitudes like debriefing or concept mapping, that helps not only to express representations but also relate ideas and bring links and categories.

Being able to undertake students' reflection is necessary itself but not sufficient, due to probably tendency to self-device. This shows the necessity of collaborative exercises in which students express and interchange their mental models with their peers or with an expert adult.

After that, next step will be analyzing of mental models, in order to consider the effects of predictions associated with their representations. This is a central activity which depends on teachers' abilities to lead students to accurate representations. The key points will be: (1) how students understand the situation, the search task and its outcomes; (2) what kind of predictions about the performance and its results students maintain; and (3) how feedback is interchanged along the web seeking process. The most difficult to be thought and modified by the students will be the second, due to the implicit attitudes that sustain their fears, motivation, reluctance and self-efficacy, among others. The most time passed seeking by the Internet, the most difficult to change their beliefs. Thus, it is essential developing reflective educational practices with young students.

Finally, it is relevant to combine reflective performances with those centered in planning and reviewing as checklist, or whatever kind of method of guided regulation. We believe that practicing these activities for long time becomes to autonomous performances to students to the next generation, more experts and able to seek and generate knowledge from the Internet information.

4. CONCLUSION

Web seeking expertise is a way to focus information seeking. The various factors and conditions at stake are forged and developed over time and by experience. For this reason, it will be essential to help students to build effective mental models about their knowledge and information technology resources. This will enable their lifelong learning to develop with the support of actual technologies in order to reach the highest state of success capable in the Information Society.

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