

INTERNET PORTALS AS THE MEANS OF EDUCATIONAL RESOURCES INTEGRATION

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Keywords: distance education, electronic resources aggregation, attribute search, educational portals.

Abstract. When conducting distance learning, it is necessary to have educational resources available via the Internet. The advantages of integrating educational resources or their descriptions using educational portals are shown. The tasks of primary creation of educational portals, as well as the methodology for their support and development are considered. Methods are described and the advantages of using attribute search in combination with contextual search are shown. The task of forming a system of classifiers of metadata and keywords, as well as assigning them to educational resources presented on the portal, for the effectiveness of attribute search is formulated. Options for placing the educational resources themselves on portals or links to these resources posted on the websites of universities and other organizations are discussed.

ИНТЕРНЕТ ПОРТАЛЫ КАК СРЕДСТВА ИНТЕГРАЦИИ ОБРАЗОВАТЕЛЬНЫХ РЕСУРСОВ

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Аннотация. При проведении дистанционного обучения необходимо наличие образовательных ресурсов, доступных через Интернет. Показываются преимущества интеграции образовательных ресурсов или их описаний с использованием образовательных порталов. Рассмотрены задачи начального образования образовательных порталов, а так же методика их сопровождения и развития. Описаны методы и показаны преимущества использования атрибутного поиска в сочетании с контекстным. Сформулирована задача формирования системы классификаторов метаданных и ключевых слов, а также присвоения их образовательным ресурсам, представленным на портале, для эффективности атрибутного поиска. Обсуждается вариантов размещения самих образовательных ресурсов на порталах или ссылок на эти ресурсы, размещаемые на сайтах Вузов и других организаций.

Introduction

Computers and information technologies are increasingly included in all areas of human activity [1-4]. In particular, the widespread use of information technology in the educational process has led to the emergence and development of distance learning [5-8]. Electronic educational resources play a large role in this, a fairly large number of which are already available on the Internet. When building e-courses, teachers need not only to be able to create their own educational resources, but also to effectively find and use what is already available on the Internet. Educational Internet portals provide both teachers and students with the opportunity to effectively search for existing educational resources, primarily for studying basic educational material.

Attribute search is a clear advantage of educational portals

The modern Internet contains a huge amount of various information resources, including educational ones, that is, those that can be effectively used in

distance learning. Universal search engines: Google, Yandex, Yahoo, use semantic or contextual search, that is, search by keywords. The result of their work are pages of links to previously found materials with identified in the search, ranked according to the frequency of use.

But there is also another method. It is an aggregation of available materials for some application, analysis or use. I would like that using a single entry point it would be possible to read everything that corresponds to the topic of my interest at the moment, all the material that is already available on the network, and it is better that everything that the topic sufficiently describes and closes even if it was not previously on the network.

These are thematic portals. Only electronic resources (or information about them) that are explicitly related to the topic of the portal are entered into the thematic portal. This is the essential difference between them [9-11].

We will focus our attention on educational portals, that is, such Internet portals that provide effective access to educational resources for distance learning [12-14]. There are only educational resources or their descriptions. Moreover, the educational resources available there also have certain attributes that facilitate and limit search results to resources that have only the attributes we have specified. That is, when searching, we do not just set keywords such as "properties of gases", but also indicate that we are looking for educational resources in physics for the 7th grade and we need a lesson plan. Or we indicate the keywords "definite integral", but we set the attributes: higher engineering education, first year, mathematics, problem book.

If we simply set the keywords "properties of gases" in a universal search engine, we would get a list of links that include descriptions of not only physical, but also chemical properties of gases, and at a very different level, up to dissertations, it is also possible to describe the gas pollution of cities and so on.

Usually users only look at the initial links in the list, then they get tired and want to get up from the computer. And in the case of a search based on specified criteria (attributes) in an educational portal, the degree of relevance of the found materials is significantly higher. And the list of materials found will be smaller, not a few pages. It may, of course, turn out to be quite small, but it will save our efforts on viewing unnecessary materials.

Thus, the distinctive features of educational Internet portals for distance learning are the following [15-18].

1. Resources are searched only for sources related to education.
2. Search is carried out primarily by attributes, search by context is also used.
3. Found resources are much better suited to the given requests.
4. It is not required to analyze materials for a large number of found addresses in order to find what is required.

Where are educational resources located, combination of options

When contacting, it does not matter whether the teaching material was downloaded from the server of the educational portal or from some resource located

in another place, possibly in another region. At the same time, various methods of content formation can be used [5, 8, 11]:

- educational materials, teaching aids and other educational materials are posted on the portal itself;
- on the portal itself there is only a list of materials, that is, a system of meta descriptions of educational tools with Internet links to the locations of the materials themselves;
- of course, both approaches are most commonly used.

The use of these approaches is driven by legal and moral preference. Sometimes the owner or developer of the material does not want to submit his material to the general portal, but wants it to be present on the website of his university. Then a meta description of the material in question is formed on the portal with a mandatory Internet link to the material.

If the developed material is posted on the Internet, then the domain owner must monitor the observance of copyright and property rights. At the same time, when the tutorial is included in the portal itself, the portal administration is physically obliged to obtain a corresponding agreement from the author or owner of the resource. With a significant amount of training materials on the portal, for example, several tens of thousands, the complexity of this is very high.

When placing on the created resource only the metadata of educational materials and links to the materials themselves, respectively, the administration of the created resource - the educational portal, does not have to worry about the legality of the placement of educational material available to everyone.

Accumulation of educational resources on different stage of portal development

Generic search engines simply reveal what is available on the Internet, not caring at all how completely they characterize the problem identified by the search query. This is not the case for educational portals. There should be identified publications that have already been posted somewhere, but necessarily with associated attributes according to the system of key headings specified in the system. But that is not all. The addition of additional teaching materials should be ensured to better support distance learning courses and programs. Naturally, these additional materials automatically appear on the Internet in general. It should be especially noted that educational portals include not just educational materials, but materials with specific pointers to the items of the classifiers available in the system. This makes it possible to more efficiently select resources by attributes.

The formation of a variety of educational tools: educational and control materials, lesson plans and so on, are significantly different at the initial stage of creation and as a constant support of work. Of course, automated methods are used, but the human labor used causes time and financial costs. At the initial stage of formation, the collection should be carried out by groups of significant volume for the rapid formation of some kind of critical mass of resources, already in demand by teachers and trainees. Thus, for the portals www.edu.ru and window.edu.ru [9, 14, 17], at the first stage, the content was formed by merging rather large portions

of electronic textbooks and manuals already available on the Internet with a significant selection and filtering of the corresponding portions of resources. Much attention was paid to assessing the quality and relevance of resources.

At the stage of sustainable functioning of the educational portal, in the presence of a large number of verified electronic students, manuals and pedagogical plans, in order to maintain demand, it is possible to use the following activities.

1. First of all, it is required to provide an easy and convenient method for developers to post their educational resource or its description on the portal, giving this the status of publication.

2. It is desirable to form a respected and well-functioning editor body of the created resource.

3. Ensure a high rating of the created resource - an educational portal in common search tools.

4. It is possible to register the created resource as an element of mass information or as an electronic journal, which will make it possible to consider the inclusion of educational materials in the portal as a publication.

5. Formation of agreements and implementation of the general activities of the educational portal and editors from related sites for the exchange of information from their catalogs.

Conclusion

Educational portals are the effective means of aggregating electronic resources and serve as the basis for providing learners with the main studied material during distance learning. Techniques for using the metadata of electronic Internet resources are increasingly developing. Universal search engines are starting to use them as well.

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