

# OER Recommender: Linking NSDL Pathways and OpenCourseWare Repositories

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## ABSTRACT

The OER Recommender ([www.oerrecommender.org](http://www.oerrecommender.org)) is a web service that helps people find relevant open educational resources. It links the digital learning resources in the National Science Digital Library (NSDL) disciplinary pathways with courses in OpenCourseWare repositories thereby providing critical *contextual* information. When a person browses a web page in a participating NSDL Pathway or OpenCourseWare repository, the recommender annotates the page with a “Recommended resources” link. The poster will describe the motivations for the project, provide detail on the recommendation engine, display recommendations for participating collections, and describe how other collections can participate in the project.

## Categories and Subject Descriptors

K.3.1 [Computing Milieux]: Computer Uses in Education

## General Terms

Design, Human Factors.

## Keywords

OpenCourseWare, Open Educational Resources, Recommender Service.

## 1. Why?: Linking Courses and Resources

*Context* is critical to the use of any resource, especially the National Science Digital Library (NSDL) and its disciplinary pathways. *Context* can transform resources in the NSDL into teaching and learning materials. *Context* provides the glue that binds individual concepts and activities together into a coherent whole.

In the United States, higher education is characterized by a course structure. Courses, on the whole, are relatively stable (e.g., introductory biology, calculus and differential equations, mechanics, electronic signals and systems, etc.). These factors are strengths; the concept of a course provides an understandable structure that is readily apparent to faculty and students in higher education. The course provides *context* for teaching and learning STEM in higher education. OpenCourseWare repositories (e.g., [ocw.mit.edu](http://ocw.mit.edu) or [ocw.usu.edu](http://ocw.usu.edu)) are web-based publications of courses and course materials. Hence the OER Recommender ([www.oerrecommender.org](http://www.oerrecommender.org)) was developed to help provide

*context* to digital learning resources by linking NSDL and OpenCourseWare repositories.

## 2. How?: Providing Recommendations and Presenting Results

The recommender uses four phases to arrive at recommendations: (1) parse metadata (acquired via OAI-PMH and RSS), (2) calculate local term weights, (3) calculate global term weights, and (4) calculate similarity scores. The recommender engine uses a standard Term Vector Model approach, which can be extended into a Latent Semantic Analysis approach at a later date if necessary. For each pair of resources that are related enough, the recommender uses the titles, description, and tags to calculate a score indicating how related they are. Recommended resources are the ones scored to be the most similar. The similarity of two resources is based on an automated analysis of the words in their metadata.

The recommender provides two methods to receive and display recommendations—sites can insert a line of JavaScript into their web pages to display recommendations and then style the XML-based recommendations for display. Or individual users can use a Firefox GreaseMonkey script to automatically display recommendations on any participating web site. Both methods are designed to provide the maximum service, while requiring a minimum of effort on the part of the user.

## 3. ACKNOWLEDGMENTS

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