Preferences of Users on Cross-Site OER Recommendations: Stay or Leave?

Slovenian KDD Conference, October 7, 2019
Ljubljana, Slovenia
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Open Educational Resources (OER)

UNESCO defines OERs as

- teaching, learning and research materials, digital or otherwise, that reside in the public domain

- or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions
Advantages of OERs

- Enable the users to access the materials anywhere and at anytime
- Allow the users to modify the materials for their own purposes, extracting only the content that is relevant to them
- Can be used to support different learning approaches
- Are available online, therefore, it is quicker to be published than in a textbook format
- Provide cost savings for the students since the materials are online
Disadvantages of OERs

- Issues on quality and reliability of the materials
- Intellectual property rights ownership
- Very fragmented landscape of repositories containing OERs, which makes finding relevant OERs a difficult task for both students and teachers.

How to make it easier?
Motivation and Objective

- Cross-modal
- Cross-site
- Cross-domain
- Cross-language
- Cross-cultural

X5gon deploys open technologies for recommendation, learning analytics and learning personalisation services that will work across various OER sites, independent of languages, modalities, scientific domains, and cultural contexts.
Cross-site Recommendations of OERs

Supplementary document

Related Open Educational Resources

- Labour and Surplus Labour
  Provider: University of Bologna Digital Library
  Language: en

- Forced Labor in the Globalized World
  Provider: Videolectures.NET
  Language: en

- Flexibility Operation in Nordic Demand Response Markets
  Provider: Videolectures.NET
  Language: en

- WiseMarket: A New Paradigm for Managing Wisdom of Online Social Users
  Provider: Videolectures.NET
  Language: en

- Biomacromolecules in controlled release and nanomedicine: poly (lactide-co-glycolide) micro and nanospheres
  Provider: Videolectures.NET
  Language: en

- Biomacromolecules in controlled release and nanomedicine: poly (lactide-co-glycolide) micro and nanospheres
  Provider: Videolectures.NET
  Language: en
Research Questions of This Study

- To understand the **navigations** amongst different OER repositories **through the recommender engine**
  - How often do the users choose to navigate to another OER provider’s website?
  - How often does the recommender engine recommend a material from different provider?
  - What material do the users choose?
  - What are the differences between the first recommended item and the chosen item in the list?
Data

- We store the data regarding to the transition when a user choose one of the item from the recommendation list.

<table>
<thead>
<tr>
<th>User ID</th>
<th>Source Material</th>
<th>Target Material</th>
<th>Selected Position</th>
<th>List of all Recommendations</th>
<th>Selection Date</th>
</tr>
</thead>
</table>

- Videolectures.NET (VL) and Universitat Politecnica de Valencia (UPV) integrated the recommender engine.

- We track the users who navigated from these websites.

- We have examined 232,884 transitions.
What Do Users Prefer?

- Scroll down and choose the 8th item amongst 20 items
- Stay on the same website
## Transitions by numbers

<table>
<thead>
<tr>
<th>Directed from</th>
<th>Directed to</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>VL</td>
<td>VL</td>
<td>176,594 (76%)</td>
</tr>
<tr>
<td>VL</td>
<td>UPV</td>
<td>14,212 (6%)</td>
</tr>
<tr>
<td>VL</td>
<td>virtOUS</td>
<td>553 (0.2%)</td>
</tr>
<tr>
<td>VL</td>
<td>Nantes</td>
<td>(0.0034%)</td>
</tr>
<tr>
<td>VL</td>
<td>MIT</td>
<td>8,854 (3.8%)</td>
</tr>
<tr>
<td>VL</td>
<td>Bologna</td>
<td>32,882 (14%)</td>
</tr>
<tr>
<td>UPV</td>
<td>VL</td>
<td>14 (0.006%)</td>
</tr>
<tr>
<td>UPV</td>
<td>UPV</td>
<td>92 (0.04%)</td>
</tr>
<tr>
<td>UPV</td>
<td>virtOUS</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>UPV</td>
<td>Nantes</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>UPV</td>
<td>MIT</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>UPV</td>
<td>Bologna</td>
<td>12 (0.005%)</td>
</tr>
</tbody>
</table>
What Do Users Prefer? (Cont.)

![Diagram showing user preferences on cross-site OER recommendations: Stay or Leave by Sunar et al. @SiKDD2019]
Chosen item vs First ranked item

- Authors are mostly different.
- Language, provider, and type are 50% same.
- The content are most likely not similar.
  - The calculation method is simply based on percentage. There is a need for a smarter calculation.
Conclusions and Future Work

- The users mostly chose to stay within the same domain provider.
- The users did not choose the first couple of items that are ranked higher in the recommendation list.
  - They rather chose items ranked at around 8th place.
- This result paves a way to further research to
  1. deeper behavioural analysis on user preferences
  2. improve the recommender engine which not only implement a content-based filtering but a method which is modified with personalised attributes
Preferences of Users on Cross-Site OER Recommendations: Stay or Leave? by Sunar et al. @SiKDD2019

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