Factors Influencing Co-Creation of Open Educational Resources Using Learning Object Repositories

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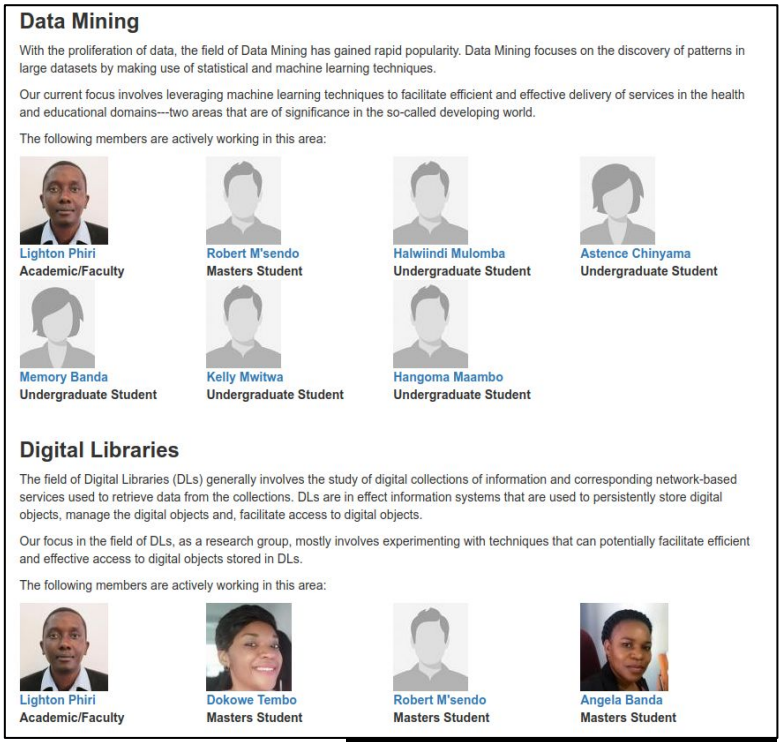
About Us

- **The DataLab research group at The University of Zambia is composed of faculty staff and students—undergraduate and postgraduate—working in three main areas**
  - Data Mining
  - Digital Libraries
  - Technology-Enhanced Learning



Data Mining

With the proliferation of data, the field of Data Mining has gained rapid popularity. Data Mining focuses on the discovery of patterns in large datasets by making use of statistical and machine learning techniques.

Our current focus involves leveraging machine learning techniques to facilitate efficient and effective delivery of services in the health and educational domains---two areas that are of significance in the so-called developing world.

The following members are actively working in this area:

Lighton Phiri
Academic/Faculty

Robert M'sendo
Masters Student

Halwiindi Mulomba
Undergraduate Student

Astence Chinyama
Undergraduate Student

Memory Banda
Undergraduate Student

Kelly Mwitwa
Undergraduate Student

Hangoma Maambo
Undergraduate Student

Digital Libraries

The field of Digital Libraries (DLs) generally involves the study of digital collections of information and corresponding network-based services used to retrieve data from the collections. DLs are in effect information systems that are used to persistently store digital objects, manage the digital objects and, facilitate access to digital objects.

Our focus in the field of DLs, as a research group, mostly involves experimenting with techniques that can potentially facilitate efficient and effective access to digital objects stored in DLs.

The following members are actively working in this area:

Lighton Phiri
Academic/Faculty

Dokowe Tembo
Masters Student

Robert M'sendo
Masters Student

Angela Banda
Masters Student

http://datalab.unza.zm

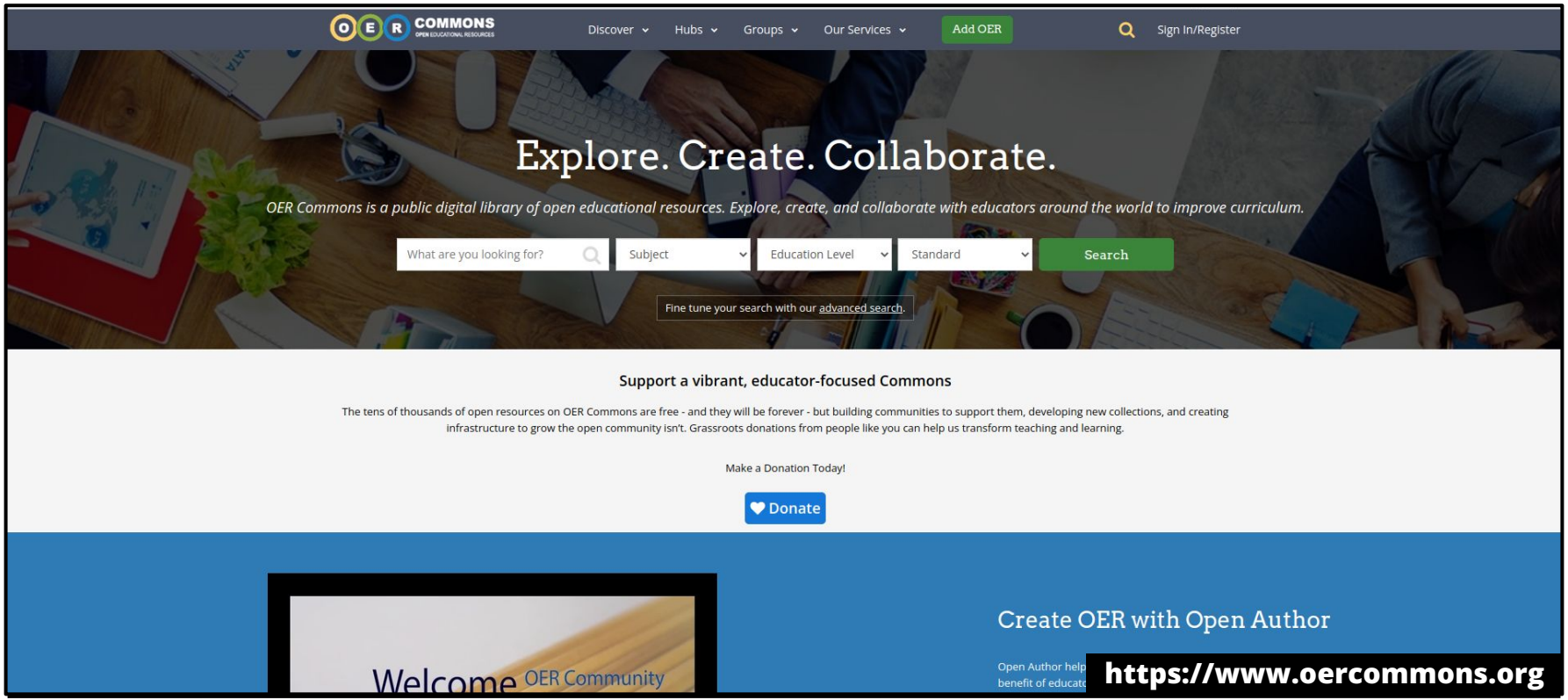
Outline

- Introduction
- Problem Statement
- Research Objectives
- Methodology
- Results and Discussion
- Conclusion and Future Work

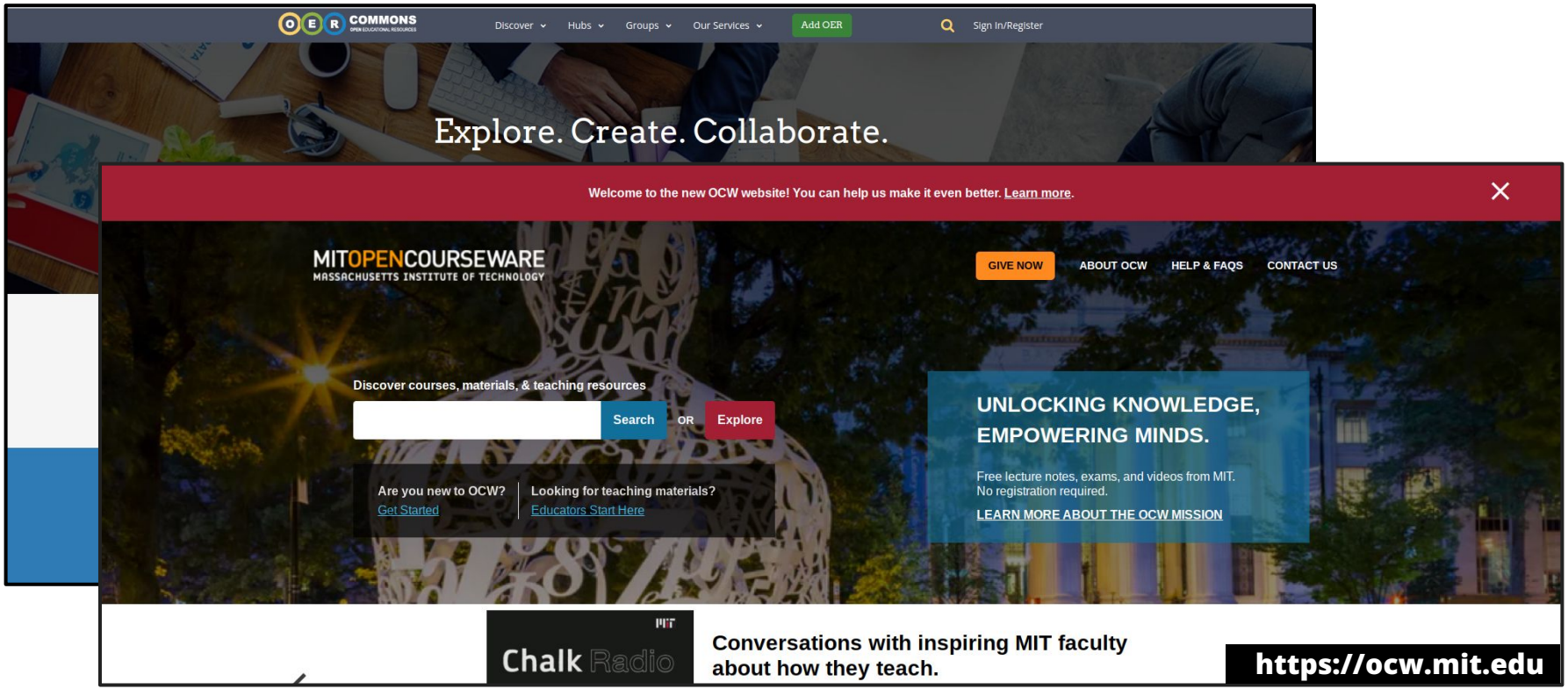
Introduction (1/2)

- **The United Nations Educational, Scientific and Cultural Organisation (UNESCO) defines Open Educational Resources (OERs) as teaching, learning and research materials available in the public domain or released under an open license that enables them to be access, used and adapted with limited or no restrictions**
  - Alongside the development of OERs has been the need to ensure that education content remains relevant and not static. A crucial enabling factor for this is the facilitation of co-creation of OERs

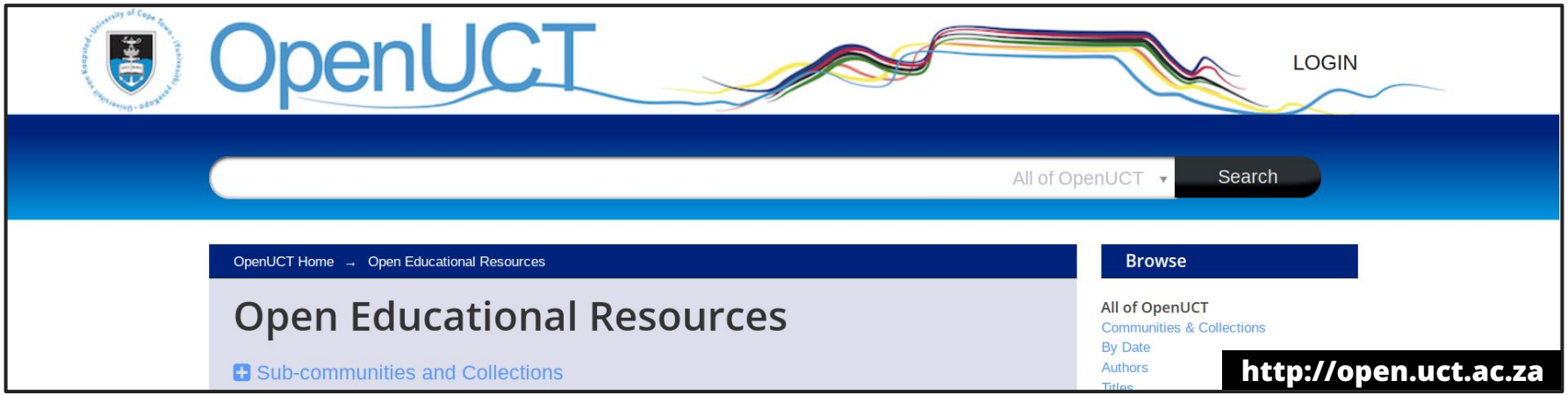
Introduction (2/2)



Introduction (2/2)



Problem Statement



- **Learning Object Repositories (LOR) provide a crucial infrastructure necessary for enabling access to OERs**
  - However, most educators use LORs as consumers, rather than producers of OERs, making co-creation of OERs difficult

Research Objectives

- **The main object of this study was to investigate the use of LORs for facilitating the co-creation of OERs by educators**
  - To identify the appropriate types of OERs to be stored in OER LORs
  - To determine personal motivating factors that are capable of encouraging educators to co-create OERs
  - To demonstrate the feasibility of setting up an OER LOR that is flexible enough to incorporate user-centric design inputs

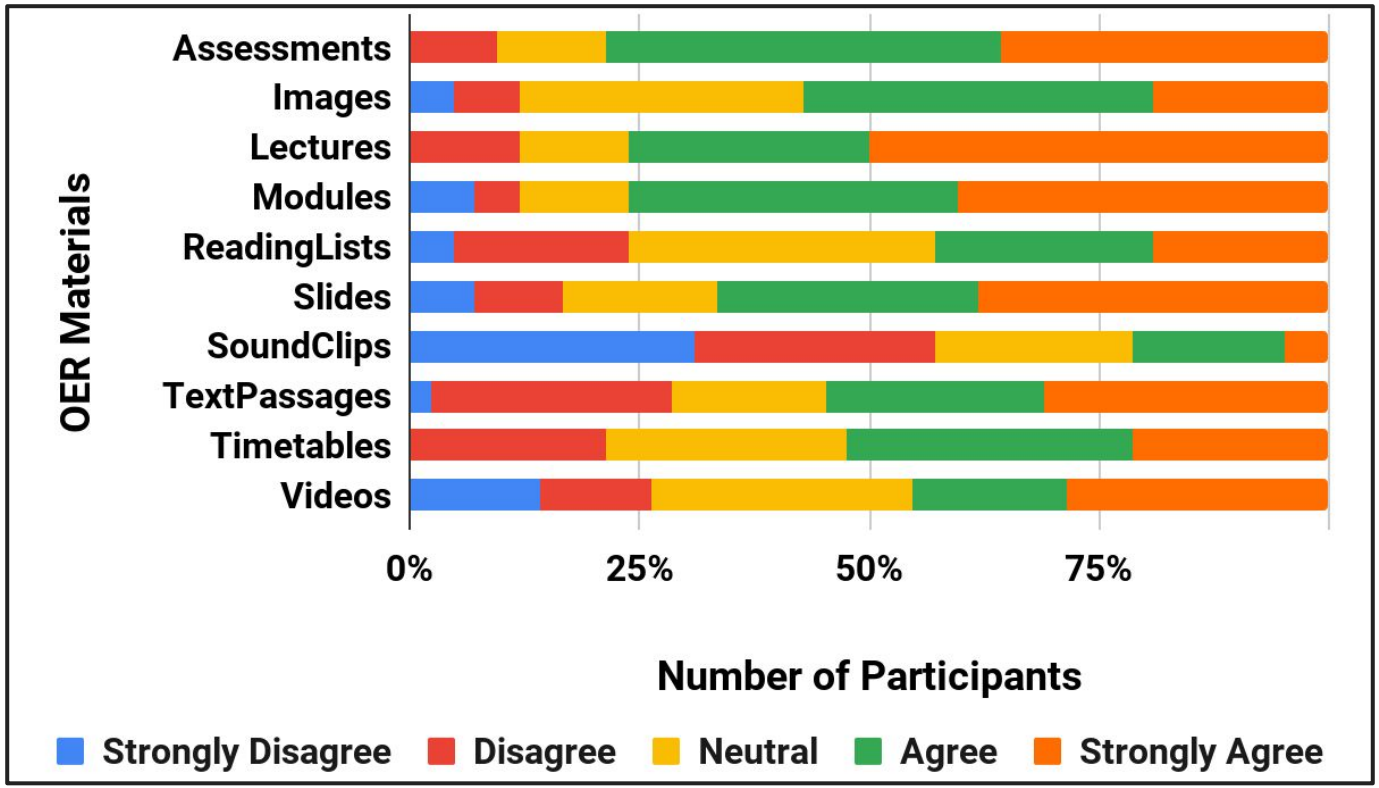
Theoretical Grounding: Uses and Gratification Theory

- **Uses and Gratification theory used due to its widespread use and success when examining how users consume media and digital content**
  - Goal is to understand how the use of digital content gratifies user needs
- **Cognitive and integrative motivation factors proposed by Rafaeli et al. adopted, by focusing on "personal motivation" using seven factors**
  - Reputation, Discussion, Contribution, Intellectual Challenge, Pleasure, Sharing Knowledge and Learning

Methodology

- **Study conducted using a mixed-methods approach**
- **Identification of factors influencing co-creation of OERs**
  - 42 College/University Lecturers, Secondary School Teachers and Student Teachers randomly sampled
  - Uses and Gratification Theory measurement instrument used to elicit responses using an online questionnaire
- **OER LOR implemented to demonstrate the feasibility of setting up a scalable OER that incorporates Uses and Gratification aspects**
  - Islandora used as candidate framework due to its scalability and flexibility

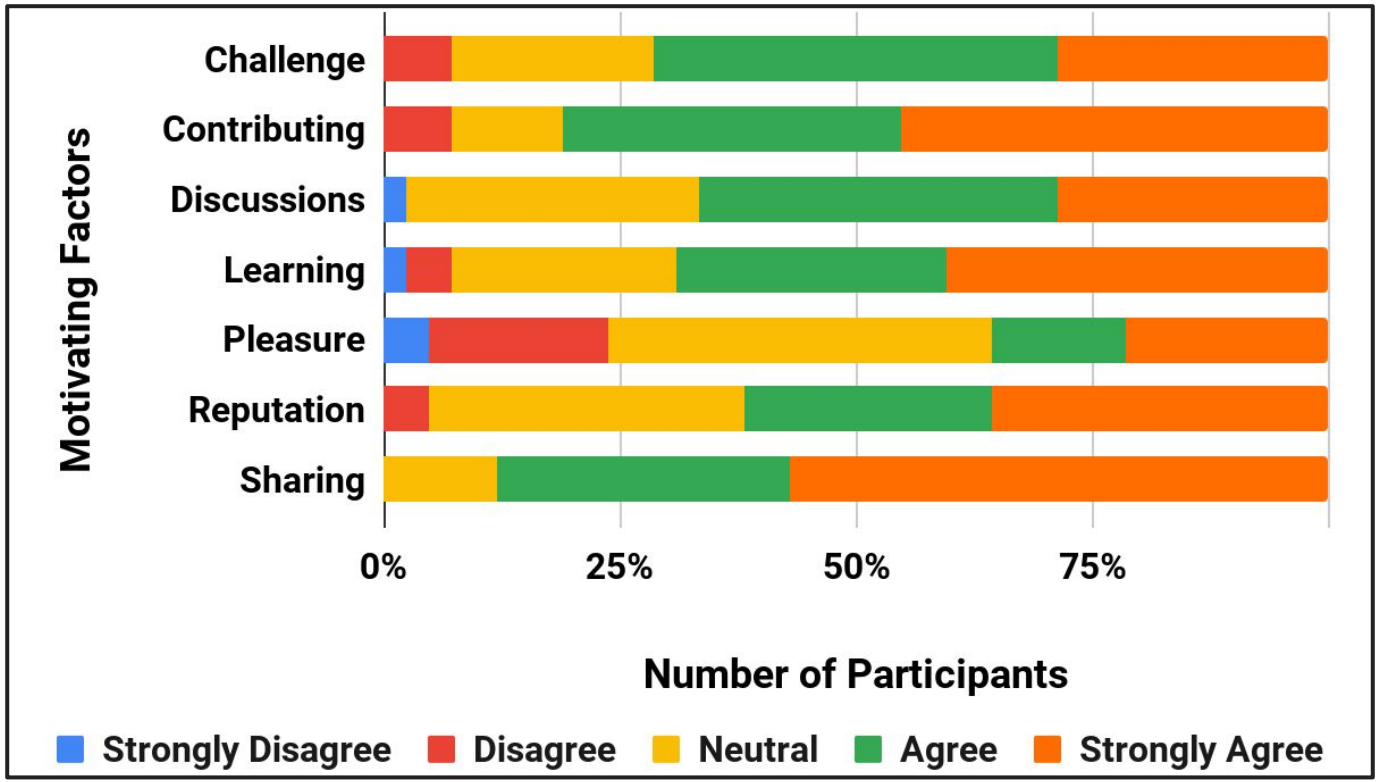
Results and Discussion: OER Materials



Results and Discussion: Ranking

	Videos	Images	Animations	Syllabus
Strongly Disagree	11.90%	4.76%	16.67%	4.76%
Disagree	7.14%	11.90%	33.33%	9.52%
Neutral	28.57%	26.19%	28.57%	16.67%
Agree	21.43%	35.71%	16.67%	33.33%
Strongly Agree	30.95%	21.43%	4.76%	35.71%

Results and Discussion: Motivating Factors



Results and Discussion: Comments (1/2)

- **What can inspire or influence educators to participate in the creation of OERs?**
  - *"Platform and space to create and share with like minds" [Participant #1]*
  - *“Enable teachers to share data easily” [Participant #36]*
  - *“Help education resources be accessible and free for all who cannot afford.” [Participant #16]*

Motivating Factor	Count
Contribution	1
Discussion	4
Intellectual Challenge	3
Learning	7
Pleasure	3
Reputation	5
Sharing Knowledge	9

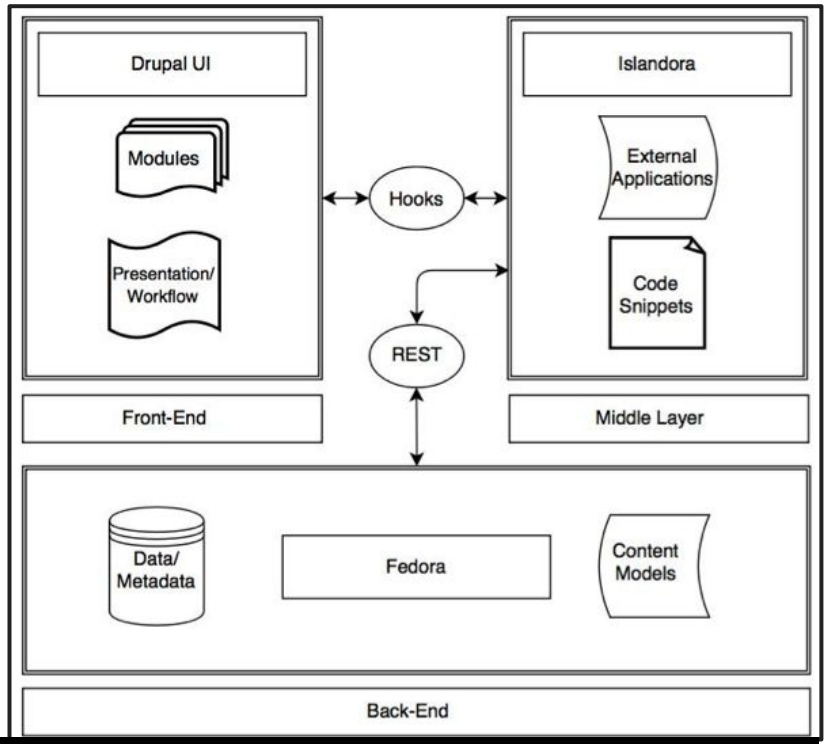
Results and Discussion: Comments (2/2)

- **What can inspire or influence educators to participate in the creation of OERs?**
  - *"IF A FINANCIAL INCENTIVE IS PROVIDED" [Participant #10]*
  - *"Incentives" [Participant #13]*
  - *"Provision of enough resources and materials" [Participant #34]*
  - *"Recognition of one's works in terms of rewards and awards" [Participant #39]*

Motivating Factor	Count
Content	1
Incentives	4
Obstacles	1
Technology	3

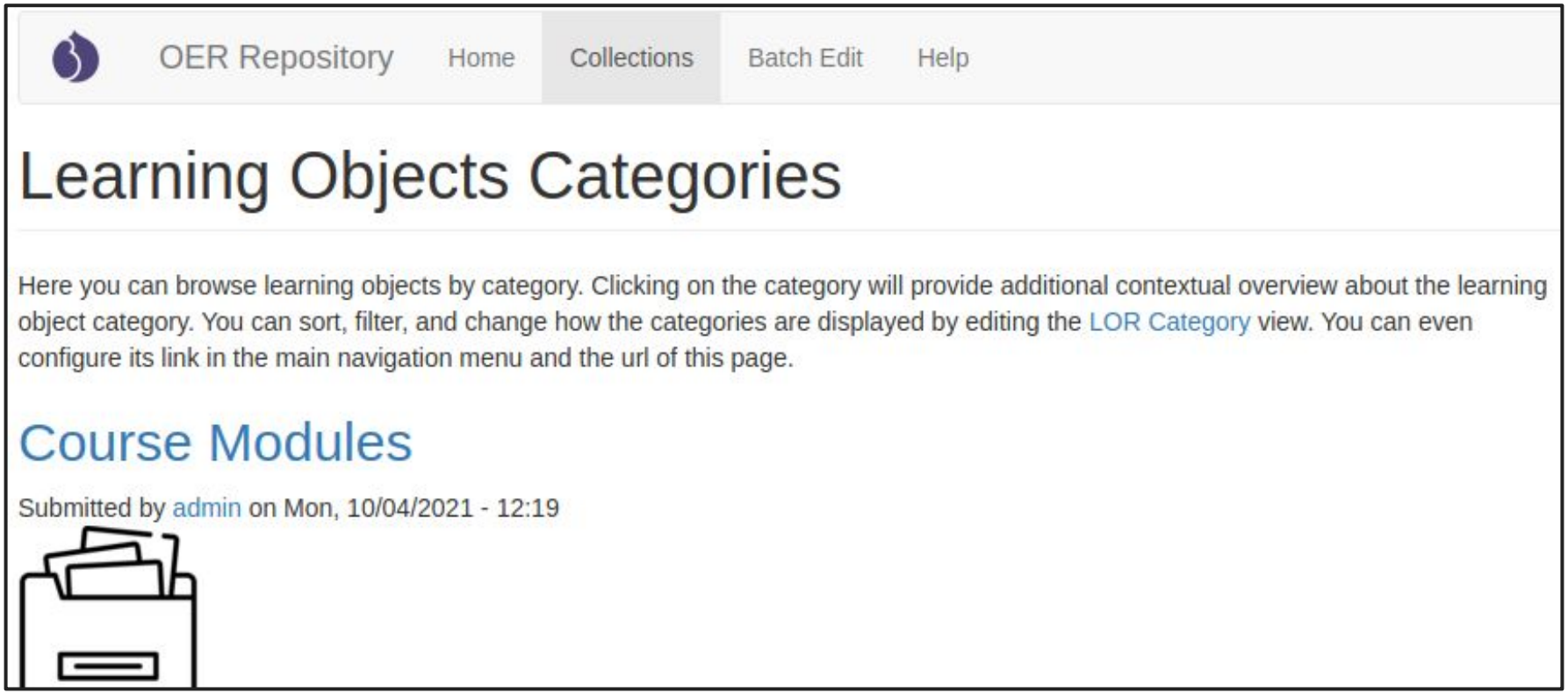
Results and Discussion: OER LOR (1/2)

- **Drupal CMS for public end-user interface**
  - Flexibility because of plugin architecture
- **Apache Solr for searching and browsing**
- **Fedora as the repository sub-layer**
  - Flexible and scalable platform



https://www.dlib.org/dlib/july16/yeh/07yeh.html

Results and Discussion: OER LOR (2/2)



Conclusions and Future Work

- **Building OER LOR that explicitly and implicitly motivate educators to contribute content can potentially result in content/OERs that are more useful**
  - While technology is important, explicit focus on personal motivating factors is essential
- **Potential future work and/or direction**
  - Evaluation of usability and usefulness of OER LOR
  - Evaluation of effectiveness of Uses and Gratification aspects when integrated into OER LOR
  - Use and usefulness of complex OER resources such as Reusable Orchestration appliances

Q & A Session

- Comments, concerns and complaints?

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