ETDs metadata practices of Indian Institutes of Technology: A comparative study

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Content

Introduction

- Institutional repository has become a significant entity for the purpose of disseminating and preserving ETDs for the use in foreseeable future where metadata plays crucial role for making the digital resources available and accessible [1].
- Metadata enables the data (digital resource) to be FAIR i.e., Findable, Accessible, Interoperable and Re-usable [2]
- Hence, accessing digital information will be difficult if it is not organised and preserved.

Objectives

- To identify the current metadata practices followed by Indian Institutes of Technology (IITs) to describe the collection of Electronic Theses and Dissertations (ETDs).
- To study the metadata quality of ETDs in IITs.

Research Methodology

- The study was carried out in two stages: first, websites of all IITs were examined, and then an online questionnaire was administered.
- The questionnaire administered was in general about IITs repositories Therefore, the major study has been done through secondary data observation.
- The metadata assessment of ETDs records involved evaluating completeness, accuracy, and consistency.

Observations and findings

- 78.26 % of the IITs have established their own institutional repositories. However, it is observed that only 47.82 % of them are accessible in public domain.
- The content are submitted by the repository staff in 88.9 % of the IITs IR while author self-archiving is also available in IIT Kanpur (IITK).
- All IITs repository except one (IIT Hyderabad) use Dspace software for the management of their digital content. Subsequently are using DCMES for the description of ETDs.
- No one single record has included all the elements of the Dublin Core for the description of ETDs.
- Repositories such as IIT Jodhpur (IITJ), IIT Guwahati (IITG), IIT Roorkee (IITR), IIT Delhi (IITD) have enriched the ETDs metadata in their IRs by extending the DCMES by using qualifiers. However, IITJ provides the rich metadata description for the ETDs.
- Common metadata elements observed among IITs IR while describing ETDs are: *dc.contributor.author, dc.date.accessioned, dc.date.available, dc.date.issued, dc.identifier.uri, dc.language, dc.title, dc.type, dc.subject, dc.publisher.*

Cont...

- Some unique metadata elements observed among IITs IR for the description of ETDs are: *dc.guide, dcterms.publisher, dc.accessionnumber, dc.type.degree, dc.creator.researcher, dc.identifier.accession, dc.date.registered, dc.date.awarded.*
- 90 % of the respondents agreed that their IR is OAI-PMH compliant and 80 % agreed that their IR is OAI-ORE compliant. However, on testing, it has been noted that only five IITs IR such as IIT Delhi (IITD), IIT Hyderabad (IIH), IIT Roorkee (IITR),IIT Gandhinagar (IITGN), IIT Guwahati (IITG) are OAI-PMH/ORE compliant.
- 4 IITs(IITD, IITG, IITH and IITR) repository ETDs are compliant with FAIR principles. However, ETDs metadata of all the accessible IITs repository is Findable and Accessible.
- 66.7 % of IIT IRs have no metadata standardization policy.

Cont...

- The incompleteness error has been observed in the dc.date.issued metadata field among the IITs IR.
- The incorrectness error has been observed in IITG. It is providing supervisor name in dc.description field rather than using dc.contributor.
- The IITR's dc.type metadata field, has been observed to be inconsistent, which defines dc.type as Thesis/Theses/Other for various ETDs collection and variations have been observed in the metadata elements of ETDs among IITs for defining the same identity.

Table: Availability and Accessibility of IITs IR

IR Available and Accessible in public domain	IR Available but not Accessible in public domain	IR Not Available in public domain
IIT Kharagpur, West Bengal	IIT Madras, Tamil Nadu	IIT Tirupati, Andhra Pradesh
IIT Delhi	IIT Kanpur, Uttar Pradesh	IIT Bhilai, Chhattisgarh
IIT Roorkee, Uttarakhand	IIT Bhubaneshwar, Odisha	IIT Dharwad, Karnataka
IIT Ropar, Punjab	IIT Gandhinagar, Gujarat	IIT Jammu, Jammu and Kashmir
IIT Hyderabad, Telangana	IIT Patna, Bihar	IIT Goa, Goa
IIT Jodhpur, Rajasthan	IIT Dhanbad, Jharkhand	
IIT (BHU), Varanasi	IIT Palakkad, Kerala	
IIT Indore, Madhya Pradesh		
IIT Bombay, Maharashtra		
IIT Guwahati, Assam		
IIT Mandi, Himachal Pradesh		

Table: DC elements used by IITs to describe the ETDs

dc elements	IIT (KGP)	IIT (B)	IIT (D)	IIT (G)	IIT (J) (RA)	IIT (MD)	IIT (I) (RA)	IIT (BHU)	IIT (H) (RA)	IIT (R)	IIT (RPR) (RA)
dc.creator									✓		
dc.creator.researcher					✓						
dc.contributor.advisor		✓	✓		✓	✓	✓				
dc.contributor.author	✓	✓	✓	✓			✓	✓		✓	✓
dc.guide										✓	
dc.date									✓		
dc.date.accessioned	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
dc.date.available	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
dc.date.issued	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
dc.date.registered					✓						
dc.date.awarded					✓						
dc.language.iso	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
dc.subject.ddc					✓						

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dc elements	IIT (KGP)	IIT (B)	IIT (D)	IIT (G)	IIT (J) (RA)	IIT (MD)	IIT (I) (RA)	IIT (BHU)	IIT (H) (RA)	IIT (R)	IIT (RPR) (RA)
dc.subject	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
dc.type	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
dc.type.degree					✓						
dc.title	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
dc.identifier									✓		
dc.identifier.uri	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
dc.identifier.other					✓						
dc.identifier. citation						✓					
dc.identifier. gov-doc	✓										
dc.identifier.issn											
dc.identifier. accession					✓						
dc.description. abstract		✓		✓	✓	✓	✓	✓		✓	✓

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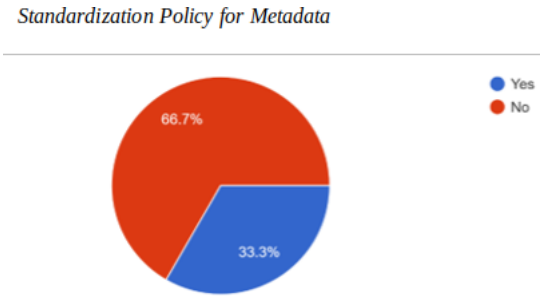
dc elements	IIT (KGP)	IIT (B)	IIT (D)	IIT (G)	IIT (J) (RA)	IIT (MD)	IIT (I) (RA)	IIT (BHU)	IIT (H) (RA)	IIT (R)	IIT (RPR) (RA)
dc.description											
dc.description. statementof responsibility				✓							
dc.description. note					✓						
dc.description. sponsor										✓	
dc.language									✓		
dc.title. alternative											
dc.publisher	✓	✓	✓		✓	✓	✓	✓		✓	
dc.publisher.place				✓							
dc.publisher. department				✓							
dcterms.publisher.		✓									

Table: DC elements used by IITs to describe the ETDs

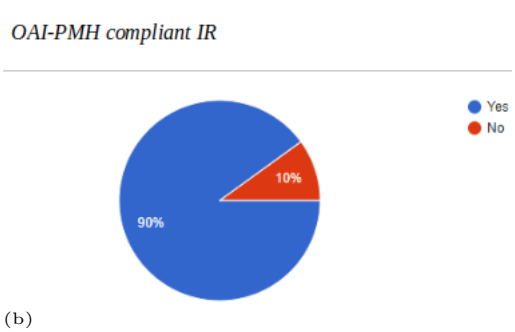
dc elements	IIT (KGP)	IIT (B)	IIT (D)	IIT (G)	IIT (J) (RA)	IIT (MD)	IIT (I) (RA)	IIT (BHU)	IIT (H) (RA)	IIT (R)	IIT (RPR) (RA)
dc.relation									✓		
dc.relation. ispartofseries			✓	✓			✓				
dc.rights.uri											
dc.rights					✓						
dc.format									✓		
dc.format.extent					✓						
dc.format. mimetype											
dc.format. accompanying material					✓						
dc.accession. number										✓	

Table: OAI-PMH/OAI-ORE compliant IITs on testing

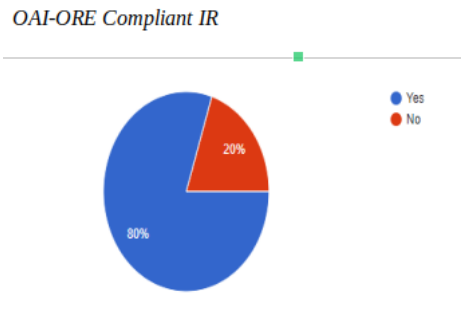
S.N	IITs	OAI-PMH	OAI-ORE
1	IIT Delhi	Yes	Yes
2	IIT Gandhinagar	Yes	Yes
3	IIT Roorke	Yes	Yes
4	IIT Hyderabad	Yes	Yes
5	IIT Guwahati	Yes	Yes
6	IIT Mandi	No	No
7	IIT BHU	No	No
8	IIT Ropar	No	No
9	IIT Jodhpur	No	No
10	IIT Indore	No	No
11	IIT Bombay	No	No


Standardization Policy for Metadata
Yes
No
66.7%
33.3%

(a)


OAI-PMH compliant IR
Yes
No
10%
90%

(b)


OAI-ORE Compliant IR
Yes
No
20%
80%

(c)

Table: *dc.date.issued*

IITs	dc.date.issued
IIT Kharagpur	YYYY-MM
IIT Indore	YYYY-MM-DD
IIT-BHU	YYYY
IIT Mandi	YYYY-MM-DD
IIT Roorkee	YYYY-MM
IIT Jodhpur	YYYY-MM
IIT Delhi	YYYY
IIT Ropar	YYYY-MM-DD

Conclusion

- Out of 23 IITs repository, 11 are accessible in public domain.
- All IITs repository except one (IIT Hyderabad) are using DSpace software for the management of digital collection and are using DCMES for the description of ETDs. Qualifiers are used by IITs repository for enriching metadata elements.
- There exists a need of metadata standardization policy.
- The study found that majority of IITs repository are maintaining good metadata practices with regard to ETDs.
- There is need to frequently examine the repositories to determine if they are operational and if any digital items are absent from their collections.

References

[1] Park, E. G., Richard, M. (2011). Metadata assessment in e-theses and dissertations of canadian institutional repositories. *The Electronic Library*, 29(6). https://doi.org/10.1108/02640471111141124

[2] GO FAIR. (n.d.). *Fair Principles*. Retrieved March 2, 2023, from https://www.go-fair.org/fair-principles/

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Thank You