

# Taxonomy Development of PTAR Local Content Collection: An Integration of LCSH and Natural Subject Heading



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# 1.0 INTRODUCTION

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- Subject classification and knowledge organization in Library and Information Science are built upon a structured taxonomy known as **Ontology**.
- **Hedden (2022)** defines taxonomy as a type of knowledge-organizing system in which concepts are connected in a hierarchical manner.
- Taxonomy development according to **Abukhader (2019)** is the basis of knowledge classification.
- **Sport science & recreational** subject classification in **UiTM Local Content Hub** is very much localized in the Malaysian context.
- The classification of the domain is **unstructured and lacks uniformity** compared to the established standard subject headings used in Library of Congress Subject Headings.

# 1.0 INTRODUCTION

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- This study comprehensively analyzes sports science & recreational taxonomy, including the knowledge domain and classification.
- This paper aims to report the **taxonomy development process** of Sport Science & Recreational in UiTM and to report the analysis of **author-assigned keywords** with comparison to Library of Congress Subject Headings.

## 2.0 LITERATURE REVIEW

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### 2.1 Defining ontology, taxonomy, and classification

Merriam-Webster Dictionaries (2019) classified **ontology** as the most basic and unstructured concept, followed by **classification** as a systematic arrangement.

**Taxonomy** is derived from the Greek word taxis, which means organization or order, and nomos, which means law or science.

## 2.0 LITERATURE REVIEW

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### 2.2 Differentiating classification and taxonomy

Table 1: Difference between taxonomy and classification system

Classification System	Taxonomy
1. Based on codes and notation.	1. Did not apply any codes.
2. Systematic arrangements in groups or categories according to established criteria.	2. A form of knowledge organization system in which concepts are linked to one another in a hierarchical order.
3. Limitation in the expansion of numbers – only within the structure.	3. Can be expanded and adapted without any limitations or restrictions.
4. The process of distributing things into classes or categories of the same type.	4. Deals mainly with the description, identification, nomenclature, and classification of organisms.
5. It is created to be browsed from top to bottom in a hierarchical manner.	5. It is designed to be browsed, searched, or may not be completely presented to users.

Source: Hedden, (2022).

## 2.0 LITERATURE REVIEW

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### 2.3 Taxonomy Development

- involves determining the characteristics of the objects of interest.
- the choice of characteristics in a taxonomy is a central problem in taxonomy development.
- the characteristics could be based on a theory but in reality, any 'theory' is often implicit (Aldenderfer & Blashfield, 1984).

## 3.0 METHODOLOGY

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1

- Subject analysis - Comparison of the number of divisions , Comparison of the number of subjects

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- Comparison of the Sports Science & Recreational Digital Collection taxonomy from the UiTM Local Content Hub with the Library of Congress Subject Headings online (Classification Web).

3

- The Sports science & recreational digital collection taxonomy is based on the author's expert knowledge which is known as an Author assigned keyword.

## 4.0 FINDINGS

The analysis reported both Sports Science & Recreational Digital Collection UiTM Local Content Hub and Library of Congress Subject Headings covers only **two levels of classification** including division and subjects.

The first analysis on comparison of the number of divisions found that there are **six (6)** division in UiTM Local Content Hub compared to only **two (2)** division in LCSH.

Table 3: Comparison of the number of divisions

UiTM Local Content Hub	Divisions	Library of Congress Subject Headings	Divisions
Sports Science & Recreational	Health and Fitness Martial Arts Outdoor recreation Sport Management Sport Science Sport Tourism	Sport and Recreation.	Sports Recreation
No of divisions	6		2



## 4.0 FINDINGS

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The second analysis on the comparison of the number of subjects found that there are **364 subjects** in UiTM Local Content Hub compared to only **98 subjects** in LCSH.

Table 4: Comparison of the number of divisions

UiTM Local Content Hub	Divisions	No of Subjects	Library of Congress Subject Headings	Divisions	No of Subjects
Sports Science & Recreational	Health and Fitness	186	Sport and Recreation.	Sports	81
	Martial Arts	27		Recreation	17
	Outdoor recreation	38			
	Sport Management	156			
	Sport Science	210			
	Sport Tourism	18			
No of subjects		364			98

## 4.0 FINDINGS

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- The analysis of the number of terms revealed that **164 terms** from the Sports Science & Recreational Digital Collection subjects are analyzed, and **three (3) different categories** were identified which are **Exact terms** used, **Similar terms** used, and finally **Not used** terms referring to terms not used in classification web.
- This study reports the first two categories.
- The Exact terms used refer to the same subject terms used in the classification web.

## 4.0 FINDINGS

Table 5: Exact term used

<b>Author Assigned Keyword</b>	<b>Terms used in LCSH</b>	<b>Author Assigned Keyword</b>	<b>Terms used in LCSH</b>
<b>Biomechanics</b>	Biomechanics	<b>Imagery</b>	Imagery
<b>Nutrition</b>	Nutrition	<b>Learning</b>	Learning
<b>Rehabilitation</b>	Rehabilitation	<b>Entrepreneurship</b>	Entrepreneurship
<b>Measurement</b>	Measurement	<b>Qualitative analysis</b>	Qualitative analysis
<b>Sports medicine</b>	Sports medicine	<b>Eating disorders</b>	Eating disorders
<b>Anxiety</b>	Anxiety	<b>Chronic diseases</b>	Chronic diseases
<b>Individual Sport</b>	Individual sports	<b>Mental health</b>	Mental health
<b>Teaching Method</b>	Teaching Methods	<b>Depression</b>	Depression
<b>Training</b>	Training	<b>Anxiety</b>	Anxiety
<b>Competition</b>	Competition	<b>Survival</b>	Survival
<b>Anatomy and physiology</b>	Anatomy and physiology	<b>Swimming</b>	Swimming
<b>Self talk</b>	Self-talk	<b>Leadership</b>	Leadership

Table 6: Similar term used

<b>Author Assigned Keyword</b>	<b>Terms used in LCSH</b>	<b>Author Assigned Keyword</b>	<b>Terms used in LCSH</b>
<b>Exercise Physiology</b>	Exercise (Physiological effect)	<b>Nutrition's</b>	Nutrition
<b>Kinesiology</b>	Kinesiology--Physiology	<b>Sleep disorder</b>	Sleep disorders
<b>Coach Athlete Relationship</b>	Coach-athlete relationships	<b>Burnout</b>	Burn out (Psychology)
<b>Motor learning</b>	Motor learning--Psychology	<b>Eco-Tourism</b>	Ecotourism
<b>Experimental research</b>	Research. Experimentation	<b>Silat</b>	Pencak silat
<b>Kayak</b>	Kayaks		

## 5.0 RESULT AND DISCUSSION

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- The taxonomy of the Sports Science & Recreational Digital Collection in the UiTM Local Content Hub revealed that the terms were basically identified by the author or author-assigned keywords is **common** in research in various fields.
- In information system development **Uzunov & Fernandez (2013)**, introduce a pattern-based taxonomy for the distribution system, which uses practitioners and experts to identify the classification and sub-classification.
- The taxonomy is extracted by five domains namely educational development, educational technology, academic management, resource types, and subjects. Thus indication Perpustakaan Tun Abdul Razak Library Digital Collection Hub was a **virtuous initiative** in facilitating access to the organizational resources.

## 5.0 RESULT AND DISCUSSION

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- Exact term used in the study explained that the authors have the **same understanding** of the subject matter.
- The identification and selection of terms were basically influenced by the author/user's prior knowledge of the subject.
- The exact terms were also reported by **Milne (2010)** in records management practice and **Abukader (2019)** in his study on library and information science which found a significant number of terms that are **valid and usable** for library and information science. This was reported to be influenced by the prior knowledge or subject background of the author.

## 5.0 RESULT AND DISCUSSION

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- The author assigned subjects or terms having **similarity** with the established classification also reported by **Valderrama-Zurián et al., (2021)** in the Cannabis research.
- They reported the majority of the terms are similar due to classification **redundancy**. Early in **2007, Wang, Chaudhry & Khoo** reported the challenge in the taxonomy is having redundancy in the categories, comprehension level, subject coverage, and hierarchical structure of the classification terms.

## 6.0 CONCLUSION AND RECOMMENDATIONS

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- Subjects used in Sports Science & Recreational are **very minimal** compared to the subjects in the classification web.
- Libraries must facilitate the information retrieval process by using and promoting a **standard and uniform subject classification** and at the same time empower the author in assigning keywords and subjects.
- Significant exposure to standard subject classification such as the **classification web** is to be offered to UiTM researchers and authors.

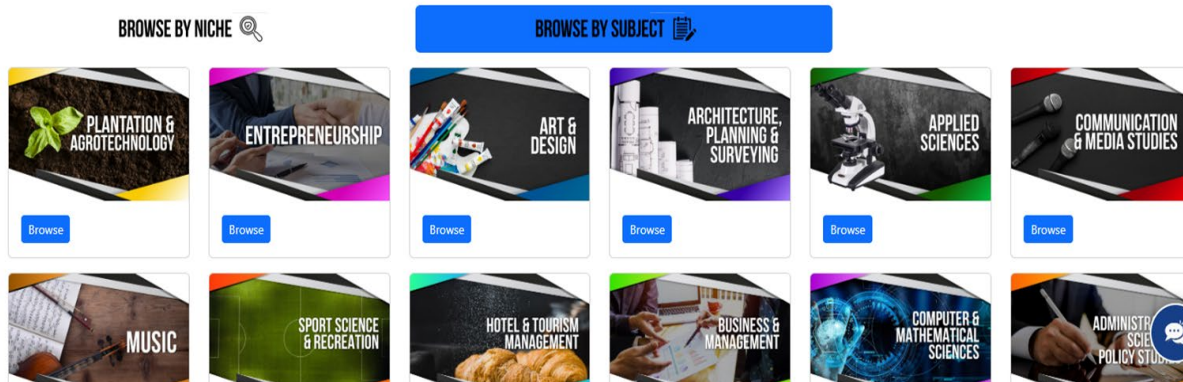
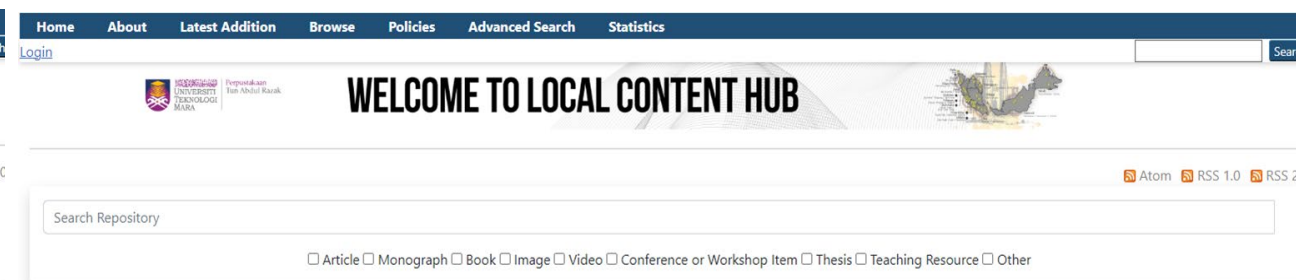
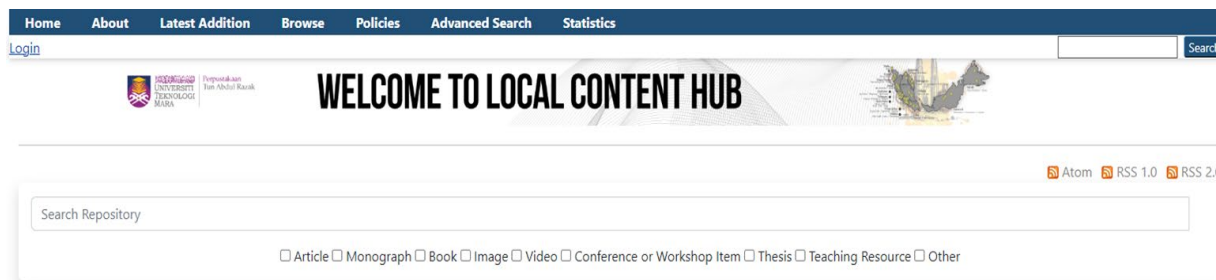
## 6.0 CONCLUSION AND RECOMMENDATIONS

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- Venture into the **expansion** of the thesauri and taxonomy tree.
- A standard format or **template** is introduced to researchers to propose new terms or subjects.
- **Verification element** should be enforced to control the variation of terms and subjects.
- UiTM local content hub is an **excellent effort** in gathering the multi-content of UiTM intellectual property.



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