

# eBirok: An Online Repository for Theses and Dissertations

Richard C. Arruejo<sup>1</sup>

<sup>1</sup>University of Northern Philippines, Philippines, [rcarruejo@unp.edu.ph](mailto:rcarruejo@unp.edu.ph)

## ABSTRACT

Ibirok in Ilocano means to search, and as for the eBirok, the name of the developed application means electronic search. This research aimed to design and develop an online repository of all theses and dissertations of both graduate and undergraduate students. The developed system provides an easier way to access the electronic copy of the manuscript of theses and dissertations using a more advanced and accurate search and providing an author-generated metadata and system-generated metadata.

The system also provides an efficient and reliable process of recording and filing of records and updating research information, generating needed reports, and providing a downloadable copy of the manuscript. The automation of accessing manual process of searching and adding theses and dissertations will surely enhance the processes. It will minimize the burden of work of the students who are conducting researches, theses, and dissertations.

**Key words :** e-Research, Manuscript, Electronic Thesis and Dissertation, ETD, Thesis, Dissertation

## 1. INTRODUCTION

Electronic information processing using computers allow for more efficient processing and storage of data. With the huge increase of research output, different schools and companies have developed an electronic system wherein information and output from these researches are kept in more organized storage.

A library is a place where information is disseminated professionally to needy clients in a user-friendly environment [1]. Simply stated, libraries are still the most likely place where one can find specific information in an easily accessible, physical location. A library is a storehouse of information. [2] stated that libraries play the role of information providers in society by selecting, acquiring, organizing, and preserving information for easy access and retrieval. Library professionals are passionate about the role of the library in providing access to the world of information. One of the fundamental roles of the library is the preservation of information and knowledge for the researchers.

The manuscript is being converted into electronic format and compiled into what is called the electronic theses and dissertations (ETD). According to [3], ETD is defined as a new way of carrying out the functions of libraries of encompassing new types of information resources, new approaches to classification and cataloging, intensive use of electronic systems and networks, and dramatic shifts in intellectual, organizational and electronic practices. The development of ETDs aid researchers in the search for related literature through the usable interfaces integrated therein.

Electronic theses and dissertations (ETD) have earned increasing attention to the academe. Before this study and along with study related to (ETD) that there are functional requirements that have been already defined such as the capability of keeping an electronic record about the researcher/s, thesis title, and dissertation, and other research that is being published in a school or establishment. Another functional feature is the capability to store a digital version of each thesis and dissertation specifically on its abstract.

Capability to search for the different title and producing the list of all researches or thesis or dissertation being conducted by a single person is also one of the functional requirements of ETD, and lastly the capability of the software to locate and show the digital version of the abstract of each research, thesis or dissertation whether in pdf form or doc form.

Related literature from [4] said that books had earned a trusted spot in culture as legitimate sources of information, having been vetted by an entire network of people, the internet does not always have that same quality assurance. However, it does have the wisdom of the crowds, relying on that at least one reader will catch and point out the mistakes. Therefore, it is upon the hands of the researcher what to cite, and it depends on the perspective of the researcher.

On the other hand, different State Universities and Colleges in the Philippines are required to conduct researches and the growing numbers of students' undergraduate or graduate studies, which requires them to make their theses or dissertations. As a result, they compile a bulk of these researches, theses; dissertations are always the output. As cited by [14] researches in areas that indicate learning experiences on technologies that support learning platforms, education, and course structure have been undertaken. Furthermore, as stated by [16] that the development of this type of research can contribute to the scientific community.



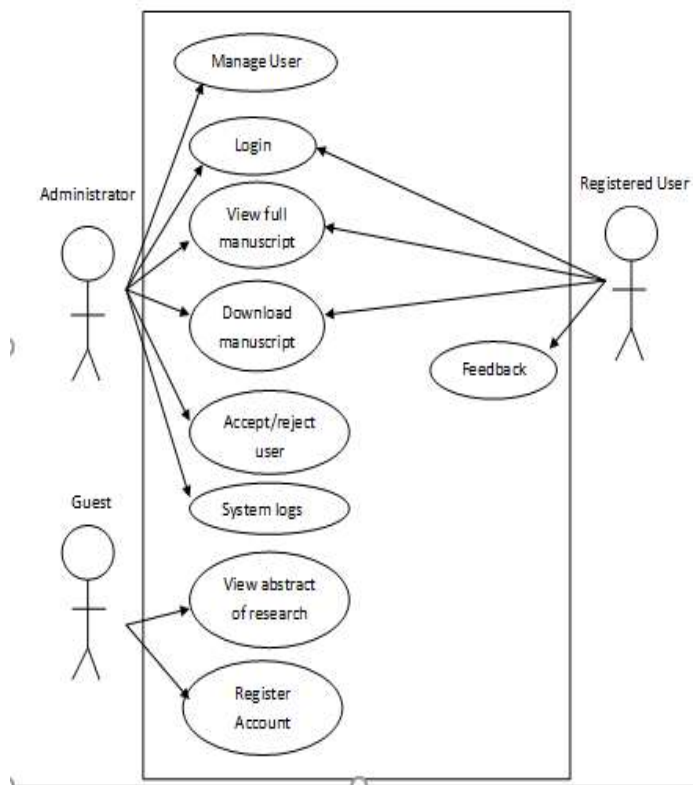
**Figure 3: Use Case**

Figure 3 shows the use case diagram. This helped the researcher to identify the activities of each actors of the system.

### 2.2.3 Construction

It is in this phase; the researcher converted the models that are designed during the previous phase into a functional one and developed the project following the iterative cycles of development. This included the process of testing the developed system, refining requirements if necessary, and development again until the application becomes complete according to the requirement that is initiated. The below table is the construction of the database needed for input and storage of data of the develop application.

**Table 1: Sample Database Instance**

UID	UNAME	UFNAME	UMNAME	ULNAME
1	admin	Richard	Corpuz	Arruejo
2	codered073	Archie	Callejo	Arruejo
3	norie03	Norie	Tuzon	Tactay
4	reg	Chad	Corpuz	Arruejo
5	setsuna	Rogelio	Rabena	Rabena

Table 1 shows the actual data in the different fields of the system's database.

**Table 2: Sample Database Schema**

Fieldname	Data Type	Description
PID	int(11)	Primary Key
PTITLE	varchar(150)	Title of the research

PAUTHOR	varchar(500)	Author/s of the research
PDATE	date	Date of completion of the research
PABSTRACT	varchar(10000)	Abstract of the research

Table 2 presents the database schema of the system's database. It presents the name of fields, types of data and the size of the data it may accept for user's input.

### 2.2.4 Implementation/Cutover

It is in this phase where the new system procedures are introduced and integrated to be operational based on the environment where it is designed for, and conducted training to the system users.

### 2.3 Data Gathering Procedure

The researchers used interviews as the data-gathering tool to collect the data regarding the issues and challenges encountered.

### 2.4 Ethical Considerations

For ethical consideration, the study proposal went through the process of the UNP Ethics Review Committee (ERC) before the conduct (data gathering) of the study.

## 3. RESULTS

After the development of the software, the following statement of objectives were answered.

### 3.1 Data Requirement of Stakeholders

The attributes of the manuscripts are the metadata, which includes title, school, author, date and keyword, rating, and views in another study, rating, and the number of views.

### 3.3 Hardware Requirements

A hardware requirement specification is often accompanied by a hardware compatibility list, especially about the speed of the processor. Hardware requirements include the physical resources of the computer. It refers to the memory, the processor, and other peripherals of a computer.

**Table 3:** Hardware (Specifications)

HARDWARE	MINIMUM	RECOMMENDED
Processor	1 GHz	3 GHz or faster
RAM	4 GB	8 GB or Higher (16 GB max).
Hard Drive	500 GB	2 TB or Higher
Optical Drive	CD-ROM or DVD-ROM	CD-RW OR DVD-RW
Motherboard	Compatible with 1.5 GHz processor	Intel motherboard
LAN	On-Board LAN 10/100 Mbps	On-Board LAN 100Mbps / 1Gbps or Higher.
Video Card	AGP 8X slot. (128 MB;64 bit).	PCI express 16X or higher , (2GB or higher; 128 bits)
Casing	Mid-Tower Desktop, Front panel USB 2.0	Server Box Type, Front panel USB 2.0 ports Fire Wire Support) 8 in 1 Card Reader.

Table 3 shows the minimum hardware requirements of the system needed by the server in the deployment of the system.

**Table 4:** Software (Specifications)

SOFTWARE	RECOMMENDED
Operating System	Windows Server 2010
Database Server	WAMP Server/XAMPP Server
Software	Dreamweaver, Notepad++, Adobe Acrobat Reader
Web Browser	Mozilla Firefox, Google Chrome
	Anti-Virus Server

Table 4 shows the software requirements of the system needed by the server in the deployment of the system.

### 3.3 Features of the eBirok: An Online Repository for Theses and Dissertations

The eBirok: An Online Repository for Theses and Dissertations, a responsive web system is developed to assist research staff, professors, UNP alumni, and most especially for the students who are currently conducting a research for thesis or feasibility studies. This study is developed after thorough research of the existing manual process of handling research studies. Similar and related studies were also searched over the internet that served as a reference for identifying relevant features of the system. As stated by [17] a responsive web system will be created, which indicates that it can be used both on the web and on cell phones, the latter being accessed through an URL.

The thorough discussion for the feature of the system are as follows:

#### 3.3.1 Security Mechanism

One of the essential aspects of creating a system that is needed to be considered is security. In designing a reliable and secured system, the researcher should design it according to levels of access to a certain individual or user.

Primarily there are three levels of access as follows: the administrator, registered users, and guests. The administrator in this study is the research coordinator. The registered users are the students who are officially enrolled during the semester; the faculty members; and the librarians whose accounts may also be provided for researchers coming from other institutions but have sought permission to access the system from the library. The guests are unregistered users.

Privileges for the users also vary. The administrator is capable of managing the users of the system and uploading the manuscripts. The registered users are allowed to view and download the entire manuscript and rate the researches. Compared to the registered users, guests can only view the abstract of the studies.

Upon successful login, either by a Researcher or the Administrator, the same Home Page.

#### 3.3.1 Advanced and Quick Search

**Figure 4:** Advanced Quick Search

Figure 4 shows Advanced Quick Search mechanism of the system. This helps users to search with ease of the documents in the database of the system. The researcher may key-in words to easily find the needed manuscripts. The words or authors are among the metadata that was identified by the researcher, which could be used to easily locate researches. The quick search feature incorporating the use of metadata is based on the study of McKay as cited by [9], requiring ways and means so that researchers find information quickly.



### 3.3.3 Report Generation



AUTHORS	TITLE	DEPARTMENT	COURSE	YEAR
DRAGON ACACIAS JOHN PABLO	BRIDGE BETWEEN BLACK BOX AND WHITE BOX LIFT BOX TESTING TECHNIQUE	College of Architecture	BS in Architecture	2000
JOSEY VARGAS JOSEY VARGAS JOSEY VARGAS	CRITICAL SUCCESS FACTORS FOR SOFTWARE PROJECTS: A COMPARATIVE STUDY	College of Engineering	BS Computer Engineer	2009
ANDREY ANALYSIS	EVALUATING THE SUCCESS OF SOFTWARE DEVELOPMENT PROJECTS IN RURAL URBAN, AND METRAN		Master in Engineer	2009
ANDREY ANALYSIS ANDREY ANALYSIS ANDREY ANALYSIS	THEORY SUBMITTED BY BOTTOMAL STUDENTS OF PHYSICAL ANATOMY LABORATORY (JENIA A. CORTES-ANALYSIS)	College of Engineering	BS-Civil Engineer	2012
JOHN RITEL	CRITICAL SUCCESS FACTORS IN SOFTWARE	College of Engineering	BS-Civil Engineer	2014

Figure 5: Report Generation

Figure 5 shows the report generation feature of the system. It is a function that produces a complete data-processing report, given only a description of the desired content and format, plus certain information concerning the input file.

In this feature, the admin can make a report regarding the inventory of the researches that are in the system. The admin will simply select what year the research was completed, select the college department, and click "generate the report." After that, the report will display on the system. The admin can also print the generated report in the system by clicking the "print" button.

## 5. CONCLUSION

After careful analysis and interpretation of the data gathered, the following conclusions were drawn:

First, to collect, manage and showcase a permanent record of the research output, the researcher concludes that there will be a need for an open access system to the research studies that will facilitate the way of research. With the presence of the metadata, which is data being required by the stakeholders, the issues about accessibility has been answered. Second, to offer the minimum hardware and software requirements of the system for better usability of the developed system.

The features incorporated in the developed system serve as a solution to the requirement of the stakeholders. The system also provides functionalities such as security mechanism, quick and advanced search, system log, and report generation.

The eBirok: An Online Repository for Theses and Dissertations will improve the way of researching. It will benefit the University, students doing theses and dissertations, and researchers who want to access the developed system. The researcher believed that through the system, the University of

Northern Philippines will become renowned in the field of research.

## RECOMMENDATION

Based on the summary and conclusion of the study, the researcher came up with the following recommendations:

The University of Northern Philippines should adopt the eBirok: An Online Repository for Theses and Dissertations to manage manuscripts efficiently and effectively for research purposes and to contribute to the realization of the objective of the University of Northern Philippines, which is to improve man's quality of life through research and community services.

Further study should also be made available to interested institutions to participate or be involved in the developed system.

The researcher recommends future researchers to improve the developed eBirok: An Online Repository for Theses and Dissertations by upgrading the features of the system like adding a feature that will automatically convert the uploaded .doc file into .pdf file to easily facilitate the documents uploaded in the system. Also, the researcher recommends creating an android app or a mobile version of the system so that portability will be enhanced. The researcher also recommends future researcher to add a feature which will allow UNP cashier to collect for a certain amount from users of the system that are not from UNP.

## ACKNOWLEDGEMENT

The researcher would like to thank the following people who are generous enough for the accomplishment of this research study: To Prof. Redentor S. Rojas, the Science and Technology Coordinator and to Dr. Edelyn Cadorna, the UNP Research Director for being very accommodating to my research needs, and to the UNP Administration headed by our dynamic President, Dr. Erwin F. Cadorna for being supportive to the UNP community.

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