Information Literacy Skills Module

ICTIL100: Introduction to Computer Technologies and Information Literacy

GREAT ZIMBABWE UNIVERSITY LIBRARY
ACKNOWLEDGEMENTS

The Great Zimbabwe University Library wishes to thank all the persons and departments that contributed in the many ways to the preparation of this module. The shared technical knowledge, experiences, and perspectives have produced a tool that will have a significant positive impact on the capability of Great Zimbabwe University students for years to come.

I would like to extend special thanks to Howard Hogo, the Deputy Librarian and the Information Literacy Skills Coordinator for compiling this module primarily for use by Great Zimbabwe University students in the Information Literacy Skills training. Additional thanks also go to the Great Zimbabwe University Library team for offering the necessary support.

Last, but not least, the preparation of this module would not have been possible without the support provided by Mr A. Munthali, the Chairperson of the Mathematics and Computer Science, Gary Magadzire School of Agriculture and Natural Sciences, the Great Zimbabwe University Management, Senate, Library Committee and the University community at large.

Lawrence Chikwanha
University Librarian

2017
OVERVIEW

Developing lifelong learners is central to the mission of higher education institutions. In this view, Information Literacy Skills (ILS) and knowledge are essential in a global information environment characterized by constant change, innovation and a multiplicity of formats and media, and an explosion in the amount of information of variable quality. The module, though designed for undergraduate students at Great Zimbabwe University, is also useful for graduate students and staff. The ILS module is intended to develop students to appreciate the theoretical and practical understanding of Information Literacy Skills and its concepts. Information Literacy is increasingly becoming important in the contemporary environment due to technological change and proliferating information resources. Individuals are faced with diverse, abundant information choices in their academic studies due to the escalating complexity of this environment. Effective use of this information requires relevant skills, which stretch beyond the simple technical skills of using specific databases or sources.

Objectives

After completing this Information Literacy Skills course, students should be able to:

✓ Demonstrate awareness and analytical use of information collections and services.
✓ Implement search strategy in appropriate information resources and databases.
✓ Evaluate various retrieved information resources, synthesize, use and cite for research purposes.
TABLE OF CONTENTS

UNIT ONE (1) ............................................................................................................................................. 1

INTRODUCTION TO INFORMATION LITERACY ....................................................................................... 1

1.0. INTRODUCTION ................................................................................................................................. 1
1.1. LEARNING OBJECTIVES .................................................................................................................. 1
1.2. DEFINING INFORMATION .................................................................................................................. 1
1.3. INFORMATION IN THE NEW ECONOMY ....................................................................................... 2
1.4. INFORMATION AND DIGITAL DIVIDE ............................................................................................ 3
1.5. INFORMATION SKILLS AND DIGITAL LITERACY ........................................................................ 3
1.6. WHAT IS INFORMATION LITERACY? .............................................................................................. 4
1.7. LIFELONG LEARNING ....................................................................................................................... 4
1.8. CHARACTERISTICS OF INFORMATION LITERACY ....................................................................... 5
1.9. QUALITIES OF AN INFORMATION LITERATE INDIVIDUAL ......................................................... 5
1.10. INFORMATION LITERACY SKILLS AND INFORMATION TECHNOLOGY LITERACY .................. 5
1.11. INFORMATION LITERACY AND HIGHER EDUCATION .................................................................. 6
1.12. INFORMATION LITERACY STANDARDS ...................................................................................... 7
1.12.1. Summary of ACRL Standards ................................................................................................. 7
ACTIVITY 1.1............................................................................................................................................... 8
1.13. ROLE OF THE LIBRARY AND INFORMATION IN ACADEMIC LIFE AND IN SOCIETY ...................... 8
1.13.1. Library Structures ...................................................................................................................... 8
1.13.2. Library in Teaching, Learning and Research ............................................................................. 8
1.13.1.1. Library Skills ......................................................................................................................... 9
1.13.1.2. Role of School Librarians ..................................................................................................... 9
1.13.1.3. Role of Duty Librarians ........................................................................................................ 10
1.10.1. GZU Library Information Collections ...................................................................................... 10
1.10.2.1. Open Access Collection ...................................................................................................... 10
1.10.2.2. Reference Collection ........................................................................................................... 10
1.10.2.3. Reserve Collection ............................................................................................................... 10
1.10.2.4. Periodicals Collection ........................................................................................................... 11
1.10.2.5. Special Collections ............................................................................................................... 11
1.10.2.6. Electronic Information Resources ....................................................................................... 11
1.14. CLASSIFICATION AND ARRANGEMENT OF INFORMATION RESOURCES ................................. 11
1.11.1. Format ......................................................................................................................................... 11
1.11.2. Content ..................................................................................................................................... 11
1.11.3. Library of Congress (LC) Classification Scheme ....................................................................... 12
1.15. GZU LIBRARY SERVICES ................................................................................................................. 14
1.15.1. Client Orientation Service ......................................................................................................... 14
1.15.2. Reference Services .................................................................................................................... 14
1.15.3. Circulation Services ................................................................................................................... 14
1.15.4. Research Services ...................................................................................................................... 14
1.15.5. Information Access & Retrieval Services ................................................................................... 15
1.15.6. Selective Dissemination of Information (SDI) .......................................................................... 15
1.15.7. Current Awareness Services (CAS) ......................................................................................... 15
1.15.8. Photocopying Services ............................................................................................................. 15
1.15.9. Facebook .................................................................................................................................... 15
UNIT TWO (2) ........................................................................................................... 17

FORMATS / TYPES OF INFORMATION SOURCES ......................................................... 17

2.0. INTRODUCTION ........................................................................................................ 17
2.1. LEARNING OBJECTIVES ....................................................................................... 17
2.2. WHAT ARE INFORMATION SOURCES? ................................................................. 17
2.2.1. PRODUCERS/CREATORS OF INFORMATION SOURCES ................................. 17
2.3. TYPES OF INFORMATION SOURCES ................................................................... 18
2.3.1. PRIMARY SOURCES ...................................................................................... 18
2.3.2. SECONDARY SOURCES ............................................................................... 18
2.3.3. TERTIARY SOURCES .................................................................................. 19
2.4. SOURCES OF INFORMATION .............................................................................. 19
2.4.1. HUMAN SOURCES ...................................................................................... 19
2.4.2. LIBRARIES .................................................................................................. 20
2.4.3. ARCHIVES .................................................................................................... 20
2.4.4. THE INTERNET ............................................................................................. 20
2.5. FORMATS OF INFORMATION SOURCES .............................................................. 21
2.5.1. PRINT BOOKS .............................................................................................. 21
2.5.2. PRINT PERIODICALS ................................................................................. 21
2.5.2.1. JOURNALS ............................................................................................. 21
2.5.3. MULTIMEDIA .............................................................................................. 22
2.5.4. REFERENCE TOOLS .................................................................................... 22
2.5.4.1. Encyclopaedias ....................................................................................... 23
2.5.4.2. Almanacs, yearbooks and handbooks ...................................................... 23
2.5.4.3. Biographical sources ............................................................................. 24
2.5.4.4. Dictionaries ............................................................................................ 24
2.5.4.5. Directories .............................................................................................. 24

ACTIVITY 2.1............................................................................................................... 24

UNIT THREE (3) ............................................................................................................ 25

INFORMATION ACCESS TOOLS: LOCATING AND ACCESSING INFORMATION .......... 25

3.0. INTRODUCTION .................................................................................................... 25
3.1. LEARNING OBJECTIVES .................................................................................... 25
3.2. INFORMATION DATABASES ............................................................................... 25
3.2.1. Database Structure ....................................................................................... 25
3.3. INFORMATION ACCESS TOOLS ........................................................................ 27
3.3.1. Web Public Access Catalogues (WebPACs) ..................................................... 27
3.3.2. Web Search Tools ......................................................................................... 27
3.3.2.1. Search Engines ....................................................................................... 28
3.3.2.2. Meta - Search Engines ........................................................................... 28
3.3.2.3. Subject Directories ............................................................................... 28
3.3.2.4. Open Access Electronic Journals and Articles ......................................... 28
3.3.2.5. Deep Web - The Invisible Web ............................................................... 29
### Information Literacy Skills Module

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3.3.</td>
<td>Online Databases</td>
<td>29</td>
</tr>
<tr>
<td>3.3.3.1.</td>
<td>Types of Online Databases</td>
<td>29</td>
</tr>
<tr>
<td>3.3.3.2.</td>
<td>Subject Portals</td>
<td>30</td>
</tr>
<tr>
<td>3.3.3.3.</td>
<td>Advantages of Online Databases</td>
<td>30</td>
</tr>
<tr>
<td>3.3.4.</td>
<td>Digital Library / Institutional Repository</td>
<td>31</td>
</tr>
<tr>
<td>3.3.2.1.</td>
<td>Why Digital Library</td>
<td>32</td>
</tr>
<tr>
<td>3.3.5.</td>
<td>Institutional Repository</td>
<td>32</td>
</tr>
<tr>
<td>3.4.</td>
<td>SEARCH TOOLS IN A DOCUMENT</td>
<td>33</td>
</tr>
<tr>
<td>3.4.1.</td>
<td>Table of Contents</td>
<td>33</td>
</tr>
<tr>
<td>3.4.2.</td>
<td>Index</td>
<td>34</td>
</tr>
<tr>
<td>3.4.2.1.</td>
<td>Author Index</td>
<td>34</td>
</tr>
<tr>
<td>3.4.2.2.</td>
<td>Subject Index</td>
<td>34</td>
</tr>
<tr>
<td>ACTIVITY 3.1</td>
<td></td>
<td>34</td>
</tr>
</tbody>
</table>

**UNIT FOUR (4)**

### INFORMATION RETRIEVAL & SEARCH STRATEGIES

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0.</td>
<td>INTRODUCTION</td>
<td>35</td>
</tr>
<tr>
<td>4.1.</td>
<td>LEARNING OBJECTIVES</td>
<td>35</td>
</tr>
<tr>
<td>4.2.</td>
<td>DEFINING INFORMATION RETRIEVAL</td>
<td>35</td>
</tr>
<tr>
<td>4.3.</td>
<td>EISENBERG’S BIG SIX MODEL</td>
<td>36</td>
</tr>
<tr>
<td>4.3.1.</td>
<td>Defining the problem-task definition</td>
<td>36</td>
</tr>
<tr>
<td>4.3.2.</td>
<td>Information Seeking Strategies</td>
<td>37</td>
</tr>
<tr>
<td>4.3.3.</td>
<td>Location and Access</td>
<td>37</td>
</tr>
<tr>
<td>4.3.4.</td>
<td>Selecting the best information source</td>
<td>37</td>
</tr>
<tr>
<td>4.3.5.</td>
<td>Synthesis</td>
<td>38</td>
</tr>
<tr>
<td>4.3.6.</td>
<td>Evaluation</td>
<td>38</td>
</tr>
<tr>
<td>4.4.</td>
<td>INFORMATION SEARCH STRATEGIES</td>
<td>39</td>
</tr>
<tr>
<td>4.4.1.</td>
<td>WebPAC Search Options</td>
<td>39</td>
</tr>
<tr>
<td>4.4.2.</td>
<td>Searching the Library WebPAC</td>
<td>40</td>
</tr>
<tr>
<td>4.4.3.</td>
<td>Searching Online Databases</td>
<td>42</td>
</tr>
<tr>
<td>4.4.4.</td>
<td>Developing a Search Strategy</td>
<td>45</td>
</tr>
<tr>
<td>4.4.4.1.</td>
<td>Advanced Search Strategies</td>
<td>47</td>
</tr>
<tr>
<td>ACTIVITY 4.1</td>
<td></td>
<td>48</td>
</tr>
</tbody>
</table>

**UNIT FIVE (5)**

### EVALUATION OF INFORMATION SOURCES

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0.</td>
<td>INTRODUCTION</td>
<td>49</td>
</tr>
<tr>
<td>5.1.</td>
<td>LEARNING OBJECTIVES</td>
<td>49</td>
</tr>
<tr>
<td>5.2.</td>
<td>GENERAL EVALUATION CRITERIA</td>
<td>49</td>
</tr>
<tr>
<td>5.2.1.</td>
<td>Authority</td>
<td>49</td>
</tr>
<tr>
<td>5.2.2.</td>
<td>Bias / Objectivity</td>
<td>51</td>
</tr>
<tr>
<td>5.2.3.</td>
<td>Reliability</td>
<td>52</td>
</tr>
<tr>
<td>5.2.4.</td>
<td>Currency</td>
<td>53</td>
</tr>
<tr>
<td>5.2.5.</td>
<td>Coverage / Scope</td>
<td>54</td>
</tr>
<tr>
<td>5.2.6.</td>
<td>Relevancy</td>
<td>55</td>
</tr>
</tbody>
</table>
Information Literacy Skills Module

5.2.7. Evaluating the text .................................................................56
5.2.8. Publisher ...........................................................................56
5.2.9. Argument ...........................................................................56
5.2.10. Audience .........................................................................57
5.2.11. Tone ................................................................................57
5.2.12. Following the trail ..............................................................58

5.3. INFORMATION USE AND SYNTHESIS ..................................................58
5.3.1. Introduction ....................................................................58
5.3.2. Understand the concept of a synthesis essay ....................60
5.3.3. Writing a literature review and using a synthesis matrix .....61
5.3.3.1. Creating Your Synthesis Matrix .......................................61
5.3.3.2. Writing Your Review .....................................................63

ACTIVITY 5.1 ..................................................................................64

UNIT SIX (6) ....................................................................................65

ECONOMIC, LEGAL, AND SOCIAL ISSUES FOR USE OF INFORMATION ..........65

6.0. INTRODUCTION .....................................................................65
6.1. LEARNING OBJECTIVES ..........................................................65
6.2. ETHICS IN RESEARCH AND WHY IS IT IMPORTANT .................66
6.3. CODES AND POLICIES FOR RESEARCH ETHICS .........................66
   6.3.1. Honesty ..........................................................................66
   6.3.2. Objectivity .......................................................................66
   6.3.3. Integrity ..........................................................................66
   6.3.4. Carefulness ......................................................................66
   6.3.5. Openness .........................................................................66
   6.3.6. Respect for Intellectual Property .......................................66
   6.3.7. Confidentiality ..................................................................66
   6.3.8. Responsible Publication ..................................................67
   6.3.9. Responsible Mentoring .....................................................67
   6.3.10. Respect for colleagues .....................................................67
   6.3.11. Social Responsibility ........................................................67
   6.3.12. Non-Discrimination ........................................................67
   6.3.13. Competence ...................................................................67
   6.3.14. Legality ...........................................................................67
   6.3.15. Animal Care ....................................................................67
   6.3.16. Human Subjects Protection ..............................................67

6.4. COPYRIGHT AND FAIR USE AT GREAT ZIMBABWE UNIVERSITY ..........67
   6.4.1. What is Copyright? ............................................................68
   6.4.1.1. What can be copyrighted? ..............................................68
   6.4.1.2. What can be copyrighted? ..............................................68
   6.4.1.3. What Does Copyright Protect? .......................................68
   6.4.1.4. What is Fair Use? ..........................................................69
   6.4.1.5. In General, What Counts as Fair Use? ..............................69
   6.4.1.6. What Should Be Avoided? ..............................................70

6.5. PLAGIARISM ..............................................................................70
6.5.1. Forms of Plagiarism by Students .................................................................70
6.5.2. What is Referencing? ..................................................................................71
6.5.2.1. Why should you reference? ....................................................................71
6.5.2.2. Which referencing system should you use? ............................................71
ACTIVITY 6.1........................................................................................................76

REFERENCE ...........................................................................................................77
SAMPLE EXAMINATION QUESTIONS ......................................................................79

FURTHER READING LIST ......................................................................................81
A. EBRARY EBOOKS DATABASE...........................................................................81
B. EBSCO EBOOKS DATABASE............................................................................82
C. EMERALD EJOURNALS DATABASE .................................................................83
D. JSTOR EJOURNALS DATABASE .......................................................................83
UNIT ONE (1)
INTRODUCTION TO INFORMATION LITERACY

1.0. Introduction

Increasingly, information (particularly that is available through the internet) comes to individuals in different formats. These formats pose new challenges for individuals in evaluating and understanding information. Information explosion pose special challenges in utilizing information. Accordingly, the immense proliferation of resources, media and technologies for access and use of information have necessitated that the users are equipped with the appropriate capabilities of information literacy.

In this unit we introduce you to the introductory concepts that give you an initial understanding of Information Literacy Skills (ILS) in relation to the global knowledge economy and the organisation of the Library.

1.1. Learning Objectives

By the end of this unit you should be able to:

- Define the concept of information in the New Economy and Digital Divide
- Link Information Literacy Standards and Higher Education
- Link Information Literacy and Lifelong Learning
- Differentiate Information Literacy Skills and Information Technology Literacy
- Understand the Characteristics of Information Literacy and Qualities of an Information Literate Individual
- Understand the Organisation and Structures of the Library
- Appreciate the role of the Library and Information in Academic Life and in Society

1.2. Defining Information

Information is variously defined as “the communication of intelligence or knowledge, new knowledge disseminated in accordance with the information requirements of the receiver for the fulfilment of his tasks” (Schultz, et al., 1975 p). It is also defined as; data that (1) has been verified to be accurate and timely, (2) is specific and organized for a purpose, (3) is presented within a context that gives it meaning and relevance, and (4) that can lead to an increase in understanding and decrease in uncertainty. The American Library Association (2002:2) defines information as “all ideas, facts and imaginative works of the mind which
have been communicated, recorded, published and, or distributed formally or informally in any format.”

The value of information lies solely in its ability to affect behaviour, decision, or outcome. A piece of information is considered valueless if, after receiving it, things remain unchanged. Information is intelligence and knowledge that contributes to the social, economic, cultural and political well-being of society irrespective of the form it is incripted in (text, figures, diagrams, symbols); irrespective of the medium it is stored in (paper, magnetic media); irrespective of the mode of dissemination (oral, written, electronic, audio-visual); irrespective of the societal activity that gave rise to it (research, administrative, census, remote sensing, etc.); and the institutions that organise and disseminate it (libraries, archives, statistical offices, geological surveys, computer centres, media and broadcasting services, telecommunication authorities, etc. (Abate, 1988).

1.3. Information in the New Economy

An information economy is where the productivity and competitiveness of units or agents in the economy depend mainly on their capacity to generate, process, and apply efficiently knowledge-based information (Castells, 2000). It is also described as an economy where information is both the currency and the product. While we have always relied on information exchange to do our jobs and run our lives, the information economy is different in that it can collect more relevant information at the appropriate time. What makes information plentiful in this economy is the pervasive use of information and communications technology.

On the other hand, Information Society is a term for a society in which the creation, distribution, and manipulation of information has become the most significant economic and cultural activity. An Information Society may be contrasted with societies in which the economic underpinning is primarily Industrial or Agrarian. It is a society characterised by a high level of information intensity in the everyday life of most citizens, in most organisations and workplaces; by the use of common or compatible technology for a wide range of personal, social, educational and business activities, and by the ability to transmit, receive and exchange digital data rapidly between places irrespective of distance. (IBM Community Development Foundation, 1997)

*Is the information economy different from the “knowledge economy”, the “new economy”, or the “network economy”?*

All these terms are used interchangeably, although the various concepts tend to emphasize different aspects of the phenomenon - like “knowledge” instead of “information” or “network” as opposed to “new”. Peter Drucker describes the information revolution as a knowledge revolution. The knowledge economy is also a networked economy. The concept stresses the important role of links among individuals, groups and corporations in the new economy.
1.4. Information and Digital Divide

A digital divide is an economic and social inequality with regard to access to, use of, or impact of information and communication technologies (ICT), (US NTIA, 1995). The term digital divide describes a gap in terms of access to and usage of information and communication technology. The digital divide separates the information rich and the information poor. The Organization for Economic Co-operation and Development defines the digital divide as the difference between individuals, households, businesses and geographic areas with regard to (a) their opportunities to access ICTs and (b) their use of the Internet for a wide variety of activities. It is the gap between those who have real access to information and communications technology and who are able to use it effectively, and those who don’t have such access. Whilst digital divide was traditionally considered to be a question of having or not having access, but today with a global mobile phone penetration of over 95%, it is becoming a relative inequality between those who have more and less bandwidth and more or less skills to use the technology and the vast information resources available digitally.

1.5. Information Skills and Digital Literacy

However, research shows that the digital divide is more than just an access issue and cannot be alleviated merely by providing the necessary equipment. There are at least three factors at play:

- information accessibility,
- information utilization, and
- information receptiveness.

More than just accessibility, individuals need to know how to make use of the information and communication tools once they exist within a community. Information professionals have the ability to help bridge the gap by providing reference and information services to help individuals learn and utilize the technologies to which they do have access, regardless of the economic status of the individual seeking help.

It is already received wisdom among those who are working to bridge the digital divide that providing access to technology is only one of many obstacles that must be addressed. Internet access is not enough, as some argues that content is one aspect of the digital divide that has been neglected. One of the content-related barriers to greater Internet uptake across society is literacy barriers. Literacy includes not only technological literacy, but basic and functional literacy that enables one to find and use the intended information carefully.
1.6. **What is Information Literacy?**

Information literacy is the ability to recognize the extent and nature of an information need, then to locate, evaluate, and effectively use the needed information. It is also defined as a set of competencies that an informed citizen of an information society ought to possess to participate intelligently and actively in that society, or as the ability to define problems in terms of their information needs, and to apply a systematic approach to search, locate, apply, and synthesise the information and evaluate the entire process in terms of effectiveness and efficiency, (American Library Association, 1989).

American Library Association (1989) believe that being information literate requires knowing how to clearly define a subject area of investigation, select the appropriate terminology that expresses the concept or subject under investigation, formulate a strategy that takes into consideration different sources of information and different ways that information is organized; analyses the data collected for value, relevancy, quality and suitability, and subsequently turn information into knowledge.

Information Literacy has gradually become a strategic issue for academic institutions, where the emphasis is placed on teaching and learning strategies that deliver the skills needed by students to succeed in an increasingly competitive environment. Information Literacy is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self-directed, and assume greater control over their own learning.

1.7. **Lifelong Learning**

Information Literacy is a vital part of university education and it forms the basis for lifelong learning. Lifelong learning is defined as ‘all learning activity undertaken throughout life, with the aim of improving knowledge, skills competence’ (Commission of the European Communities, 2001). Lifelong learning is therefore about:

- Acquiring and updating all kinds of abilities, interests, knowledge and qualifications from the pre-school years to postretirement. It promotes the development of knowledge and competences that will enable each citizen to adapt to the knowledge-based society and actively participate in all spheres of social and economic life, taking more control of his or her future.
- Valuing all forms of learning.
- Partnership working.
- Insight into the demand for learning in the knowledge-based society - which will entail redefining basic skills, to include for instance the new information and communication technologies.
- Adequate resourcing.
- Facilitating access to learning opportunities.
- Creating a learning culture by giving learning a higher profile.
Information Literacy Skills Module

Striving for excellence through the introduction of quality control and indicators to measure progress.

1.8. Characteristics of Information Literacy

Information Literacy is guided by the following principles:

- Determining the nature and extent of information needed.
- Accessing needed information efficiently and effectively.
- Evaluating information and its sources critically and competently and incorporates selected information into his or her knowledge base and value system.
- Using information effectively to accomplish a specific purpose, individually or as a member of a group.
- Understanding many of the economic, legal and social issues surrounding the use of information and use this information accurately, creatively, and ethically.

1.9. Qualities of an Information Literate Individual

Pawley (2003) argues that we can consider Information Literacy as a dynamic kind of information leading to the transformation of lives. As such the learning process is now increasingly based on the capacity of an individual to find and access knowledge, and to apply it to problem-solving. Doyle (1994) defined an information literate person as one who:

- Recognises that accurate and complete information is the basis for intelligent decision-making.
- Recognises the need for information – timely.
- Formulates questions based on information needs.
- Identifies potential source(s) of information – from a vast available.
- Develops successful and effective search strategies.
- Access various sources of information independently and efficiently.
- Evaluates information obtained meaningfully.
- Organizes information obtained effectively for practical application,
- Integrates new information into an existing body of knowledge, and
- Uses information in critical thinking and problem-solving.

1.10. Information Literacy Skills and Information Technology Literacy

Information Literacy is related to Information Technology Literacy, but has broader implications for the individual, the educational system, and for society. Information Technology Literacy enable an individual to use computers, software applications, databases, and other technologies to achieve a wide variety of academic, work-related, and personal goals. Generally, Information Technology Literacy is the simple understanding and the ability
Information Literacy Skills Module

to manipulate and use computers and related systems. Information literate individuals necessarily develop some technology skills (Association of College and Research Libraries, 2000).

Information literacy, while showing significant overlap with information technology skills, is a distinct and broader area of competence. Increasingly, Information Technology Skills are interwoven with, and support, Information Literacy. A 1999 report from the National Research Council promotes the concept of “fluency” with information technology and delineates several distinctions useful in understanding relationships among information literacy, computer literacy, and broader technological competence.

The report notes that “computer literacy” is concerned with rote learning of specific hardware and software applications, while “fluency with technology” focuses on understanding the underlying concepts of technology and applying problem-solving and critical thinking to using technology. As such, Information and Communication Technology Literacy refers to knowledge of technology applied to information problem-solving (Markauskaite, 2006). It recognizes that full participation in the digital knowledge age requires “taking students from ICT access to knowledge sharing” (Fourie and Bothma, 2006).

Among these are information literacy’s focus on content, communication, analysis, information searching, and evaluation; whereas information technology “fluency” focuses on a deep understanding of technology and increasingly skilled use of it. Information literacy, on the other hand, is an intellectual framework for understanding, finding, evaluating, and using information -- activities which may be accomplished in part by fluency with information technology, in part by sound investigative methods, but most important, through critical discernment and reasoning. Information literacy initiates, sustains, and extends lifelong learning through abilities which may use technologies but are ultimately independent of them.

1.11. Information Literacy and Higher Education

Developing lifelong learners is central to the mission of higher education institutions by ensuring that individuals have the intellectual abilities of reasoning and critical thinking, and by helping them construct a framework for learning how to learn. Universities provide individuals with the foundation for continued growth throughout their careers, as well as in their roles as informed citizens and members of communities. Information literacy is a key component of, and contributor to, lifelong learning. Information literacy competency extends learning beyond formal classroom settings and provides practice with self-directed investigations as individuals move into internships, first professional positions, and increasing responsibilities in all arenas of life. Because information literacy augments students’ competency with evaluating, managing, and using information, it is now considered by several regional and discipline-based accreditation associations as a key outcome for university students (Association of College and Research Libraries, 2000).
For students not on traditional campuses, information resources are often available through networks and other channels, and distributed learning technologies permit teaching and learning to occur when the Lecturer and the student are not in the same place at the same time. Information literacy competencies for distance learning students should be comparable to those for ‘on campus’ students.

1.12. Information Literacy Standards

*Information Literacy Competency Standards for Higher Education* provides a framework for assessing the information literate individual. There a number of Information Literacy Standards and Great Zimbabwe University as an academic institution ACRL Standards are the most appropriate. Information Literacy standards provide specific indicators that identify Information Literacy. They also provide a framework for assessment methodologies based on abilities and performance. For colleges and universities, the Association of College and Research Libraries (ACRL) provided the empirical necessities and educational guidelines to facilitate information literacy education in its *Information Literacy Competency standards for Higher Education* (Association of College and Research Libraries, 2000). Further, the Association also articulated performance indicators and outcomes for assessing the degree to which students successfully achieved information literacy. As such the standards below provide insights, inform, enrich, and help facilitate articulation and execution of the mission, goals, and objectives of information literacy education.

1.12.1. Summary of ACRL Standards

<table>
<thead>
<tr>
<th>Standards</th>
<th>Indicators</th>
</tr>
</thead>
</table>
| 1. Access information efficiently and effectively | • Recognises the need for information.  
• Recognises that accurate and complete information is the basis for intelligent decision-making.  
• Formulates questions based on information needs.  
• Identifies a variety of potential sources of information.  
• Develops and uses successful strategies for locating information. |
| 2. Evaluates information critically and competently | • Determines accuracy, relevance, and comprehensiveness.  
• Distinguishes among facts, point of view, and opinion.  
• Identifies inaccurate and misleading information.  
• Selects information appropriate to the problem or question at hand. |
| 3. Uses information effectively and creatively   | • Organises information for practical application.  
• Integrates new information into one’s own knowledge.  
• Applies information in critical thinking and problem-solving.  
• Produces and communicates information and ideas in appropriate formats. |
Activity 1.1

1. Identify and explain at least two characteristics of information literacy?
2. What is Lifelong learning?
3. Outline how has Digital Divide shaped Information Literacy Skills?
4. Distinguish between Information Literacy Skills and Information Technology Literacy?
5. Define Information Literacy in relation to ACRL Standards?

1.13. Role of the Library and Information in Academic Life and in Society

1.13.1. Library Structures

“A library is a collection of resources in a variety of formats that is (1) organised by information professionals or other experts who (2) provide convenient physical, digital, bibliographic, or intellectual access and (3) offer targeted services and programmes (4) with the mission of educating, informing, or entertaining a variety of audiences (5) and the goal of stimulating individual learning and advancing society as a whole.” (American Library Association, p.2).

A library can also defined as an organised collection of sources of information such as books, journals and other printed resources; audio, or visual resources, including CDs, cassettes, videotapes, DVDs, video games; electronic books (eBooks), electronic journals (eJournals).

An academic library's purpose is to support the teaching and research activities of the university. Most academic libraries are much larger than public libraries and generally, do not collect non-academic resources. Academic resources include all resources from which students may benefit. It includes any form of educational content such as books, e-books, journals, e-journals and audio visuals that enhance a student’s intellectual knowledge.

The use of a wide variety of academic resources is essential for students to reach their maximum potential. However, since there is now a much greater range of resources available, students need guidance on how to use resources effectively and to understand that different approaches are needed for specific tasks.

1.13.2. Library in Teaching, Learning and Research

The Library plays a central role in students learning at the university. Over the years the Library has carefully selected resources that meet the teaching, learning and research needs
of staff and students. Singh and Kaur (2009) stressed that preservation and access to knowledge and information is the main mandate of academic libraries alongside supporting the mission of their parent institutions which is teaching and research.

The Library is at the forefront of providing information services to students, lecturers, and researchers in order to support teaching, learning and research. Scholars have emphasised on the crucial role of academic libraries in research and scholarship in institutions of higher learning. Many a times academic libraries are referred to as the heart or nerve centres of institutions of higher learning where all academic activities revolve.

Access to information is essential to the academic life of the University. The University is home to a number of unique collections and the Library’s role in acquiring, managing and providing scholarly access to many of these collections will continue. The Library system provides comprehensive access to printed materials for teaching, learning and research. At the same time there is a growing trend towards electronic information provision and the Library is responsible for providing content: e-Books, electronic Journals, multimedia, interactive learning programmes, etc. to include procuring content from external sources, and digitising local content.

The Library is a significant creator of content, particularly through the digitisation projects (Institutional Repository) to support teaching and learning, and have taken a key role in the collection, storage and preservation of digital content created by the scholarly community and University administration.

The Library priorities its users and environments and make services, resources, tools and operational decisions consistent with these priorities.

1.13.1.1. Library Skills

The skills needed by an individual to be information literate in a library context include:

- Using information and library resources both within the library and through electronic platforms effectively and efficiently.
- Selecting the best resource to use to meet an information need, not just those that are most convenient or familiar.
- Applying critical evaluation and synthesis of selected sources.
- Citing sources appropriately and accurately.

1.13.1.2. Role of School Librarians

A School Librarian is a Librarian that the Library has dedicated to each School to assist the School’s staff and students with their information needs for teaching, learning and research purposes. To this end, a School Librarian executes the following:
Develops School orientated educational resources collections in all formats in liaison with academic staff.

Offers periodic Information Literacy Skills (ILS) training to School students and staff.

Provides selective dissemination of information and current awareness services to School students and staff.

Assists the School’s students and staff with research and document delivery.

Promotes the School’s use of the Library’s information resources.

Keeps a maintained Reserve collection for the School’s needs.

1.13.1.3. Role of Duty Librarians

A Duty Librarian is a Librarian that operates from the Enquiries Desk to assist Library clients with general to specific information queries. Unlike School Librarians, Duty Librarians rotates. Duty Librarians assist clients to use the library effectively through guided orientation.

1.10.1. GZU Library Information Collections

GZU Library provides resources to support programmes offered in all Academic Units. The Library collections are divided as follows:

1.10.2.1. Open Access Collection

The bulk of the Library’s book stocks are located on open shelves. Clients may select and borrow reading resources from the open stacks for out-of-the Library use for specified loan periods.

1.10.2.2. Reference Collection

This collection includes resources of reference nature which are for use in the Library only and may not be borrowed e.g. atlases, bibliographies, encyclopaedia, dictionaries, almanacs, biographies and yearbooks etc.

1.10.2.3. Reserve Collection

The Reserve Collection is a closed collection which means that clients are not allowed to enter this area. The Reserve Collection caters for rapid circulation of items in high demand and items are issued for short periods only, usually for part of a day, overnight or over the weekend. Research reports, dissertations, theses, hard copies of past examination papers and other loose-leaf resources are also kept on Reserve for greater security.
1.10.2.4. Periodicals Collection
The Library subscribes to a selection of local and international academic journals, magazines and newspapers and receives other journals as donations which are for use in the Library only.

1.10.2.5. Special Collections
Special Collections of rare and valuable, out-of-print, bulky and fragile resources are developed from time to time. Special collections also include staff publications.

1.10.2.6. Electronic Information Resources
Electronic resources are information databases that are accessed through a computer, and more commonly via the World Wide Web (the Internet). Electronic resources offer Library clients potential solutions to information shortages. The Library has a variety of Online Databases, housing eBooks and eJournals, covering various disciplines. Clients are highly encouraged to use these resources for academic and research purposes from wherever they would be and can also download guided by the copyright law.

NB: All the Library collections above are important for learning and research purposes. You are advised to use them interchangeably in your studies.

1.14. Classification and Arrangement of Information Resources
Information is organized according to some logical relationship. As such information is organized using several criteria, but the two major ones are content and format.

1.11.1. Format
Format refers to the medium used to present or store the information. Information comes in many configurations, digital, print, online, electronic, audio, audio visual. Each of these configurations is a format. Formats affect the ease of access to information, and can be used as another way to organize it.

1.11.2. Content
Generally information is organized by subject. A call number or class number is a label used to keep books on the same subject together on the shelves. It identifies the book or item on the shelf. An example of a call number or class number is HF5415 KOT 2006.

Resources in the GZU Libraries are arranged on the shelves according to the Library of Congress (LC) Classification system, which separates all knowledge broadly into 21 Subjects
Classes. Library of Congress is an alphanumeric classification scheme, with a combination of the alphabet and numbers. Each class is identified by a letter of alphabet, subclasses by combinations of letters, and subtopics within classes and subclasses by numerical notation.

1.11.3. **Library of Congress (LC) Classification Scheme**

<table>
<thead>
<tr>
<th>A General Works</th>
<th>N Fine Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE Encyclopaedias</td>
<td>N Visual arts (general)</td>
</tr>
<tr>
<td>AP Periodicals (general)</td>
<td>N 61 Theory, philosophy, aesthetics</td>
</tr>
<tr>
<td>B Philosophy, Psychology, Religion</td>
<td>NA Architecture</td>
</tr>
<tr>
<td>B History &amp; systems of philosophy</td>
<td>NB Sculpture</td>
</tr>
<tr>
<td>BC Logic</td>
<td>NC Drawing, design, illustration, commercial art</td>
</tr>
<tr>
<td>BF Psychology</td>
<td>ND Painting</td>
</tr>
<tr>
<td>BL-BX Religions, mythology, rationalism</td>
<td>NE Print media</td>
</tr>
<tr>
<td>C Auxiliary Sciences of History</td>
<td>NK Decorative &amp; applied arts</td>
</tr>
<tr>
<td>CB History of civilization &amp; culture</td>
<td>NX Arts in general (visual &amp; performing arts)</td>
</tr>
<tr>
<td>CS Genealogy</td>
<td>P Language and Literature</td>
</tr>
<tr>
<td>CT Biography (General)</td>
<td>PA Classical languages &amp; literature (Greek &amp; Latin)</td>
</tr>
<tr>
<td>D History - General, Eastern Hemisphere</td>
<td>PC Romance languages (French, Italian, &amp; Spanish)</td>
</tr>
<tr>
<td>DA Great Britain</td>
<td>PD Old Germanic &amp; Scandinavian languages</td>
</tr>
<tr>
<td>DB Austria, Czechoslovakia, Hungary</td>
<td>PE English language</td>
</tr>
<tr>
<td>DC France</td>
<td>PF German, Dutch, Flemish languages</td>
</tr>
<tr>
<td>DD Germany</td>
<td>PG Slavic languages &amp; literature</td>
</tr>
<tr>
<td>DE Mediterranean, Greco-Roman world</td>
<td>PL East Asian, African, &amp; Oceanic languages &amp; literatures</td>
</tr>
<tr>
<td>DF Greece</td>
<td>PN Literature, literary history &amp; criticism, Theatre, journalism, film, television, motion pictures</td>
</tr>
<tr>
<td>DG Italy</td>
<td>PN 1010 Poetry</td>
</tr>
<tr>
<td>DK Russia</td>
<td>PN 1600 Drama</td>
</tr>
<tr>
<td>DP Spain, Portugal</td>
<td>PN 4699 Journalism</td>
</tr>
<tr>
<td>DR Eastern Europe, Turkey</td>
<td>PN 6099 Poetry collections</td>
</tr>
<tr>
<td>DS Asia</td>
<td>PN6110.5 Drama collections</td>
</tr>
<tr>
<td>DT Africa</td>
<td>PN 6121 Oration collections</td>
</tr>
<tr>
<td>E, F History - Western Hemisphere</td>
<td>PQ Romance literatures</td>
</tr>
<tr>
<td>E America (General), U.S.</td>
<td>PR English literature</td>
</tr>
<tr>
<td>F1-975 U.S. local history</td>
<td>PS American literature</td>
</tr>
<tr>
<td>F1001-1140 Canada</td>
<td>PT Germanic literatures</td>
</tr>
<tr>
<td>F1201-1392 Mexico</td>
<td>Q Science &amp; Mathematics</td>
</tr>
<tr>
<td>F1401-3799 Central &amp; South America, Caribbean</td>
<td>QA Mathematics</td>
</tr>
<tr>
<td>G Geography, Anthropology, Recreation</td>
<td></td>
</tr>
<tr>
<td>G Atlases, globes, maps</td>
<td></td>
</tr>
<tr>
<td>GB Physical geography</td>
<td></td>
</tr>
<tr>
<td>GN Anthropology</td>
<td></td>
</tr>
<tr>
<td>GR Folklore</td>
<td></td>
</tr>
</tbody>
</table>
1.15. GZU Library Services
The primary function of the library is to support the academic and research needs of both students and staff in accordance with the University Mission Statement. The library offers the following services to fulfil this mandate:

1.15.1. Client Orientation Service
General orientation is given to all first year students during the Orientation Week and to new members of staff by arrangement. Specific orientation to groups on Library services and products is also offered by arrangement. Individual and, or group guided tours usually forms the backbone of Library orientation activities.

1.15.2. Reference Services
The Enquiries Desk is the clients’ first port of call for various issues on Library products and services. The desk handles general to specific clients’ requests and is also a good referral point to various enquiries - ranging from; the catalogue, location of books on shelves, clients’ induction, comprehensive literature searches and online searching of electronic resources subscribed by the library.

1.15.3. Circulation Services
The Library facilitates the circulation of resources owned by Great Zimbabwe University Library to registered clients. Circulation services facilitate physical access to the Library collection for out of the Library use and in some cases within the Library (closed/ special collections). There are different borrowing privileges for Students and Staff. Books in the library’s catalogue that are not immediately available in the library may be reserved by filling in a Request Card at the Circulation desk. Library circulation policy ensures that there is equitable and timely access to information by all Library clients.

1.15.4. Research Services
GZU Library has a reasonable sitting capacity designed for conducive studying (research). In addition to the physical books and journals, Library Clients can also research from the vast electronic databases the Library subscribes to using hard-wired or wireless network connections. The Library has computers which are dedicated for this academic research purpose; including searching the WebPAC (Catalogue), and the Institutional Repository (IR). Additionally the Library also provides remote (out-of-campus) access to electronic resources through tailored web access management platforms. The Library from time to time also holds Information Literacy Skills training workshops to assist clients in conducting effective research.
1.15.5. **Information Access & Retrieval Services**
In the current information environment, academic libraries are recognising that providing access to resources is a complex phenomenon. As a first port of call, Clients should utilise the Library WebPAC service, to search for all information in the Library’s collections. To meet the needs of Clients, GZU Library uses Library of Congress Classification Scheme to organise its physical collections. The scheme brings related subject resources together and is also ideal for shelf browsing.

1.15.6. **Selective Dissemination of Information (SDI)**
Selective Dissemination of Information (SDI) refers to tools and resources used by the Library to keep a client informed of resources on specified topics. SDI involves selecting from a flow of new documents, those of interest to individual or group of Library Clients. SDI also includes information already in the collection that the Library might deem necessary to individuals at that time for study or research purposes.

1.15.7. **Current Awareness Services (CAS)**
A current awareness system alerts Library Clients, on a periodic basis, to the latest publications in their specified field(s) of interest, keeping one’s research up-to-date. It involves making Library clients aware of new acquisitions available in the Library that may be of interest to them. The role of CAS is to: alert users to new books or journal resources received in the library (be it in print, electronic or multimedia format); alert users to the recent literature in a given subject; and provide non-bibliographic information, such as news on meetings, training courses and other events of interest to users.

1.15.8. **Photocopying Services**
All photocopying made from books or periodicals is subject to the international 'fair copying' declaration. The Copyright Act is available in the Library for the guidance of clients.

1.15.9. **Facebook**
Sing-in for the Library Facebook page on: [http://www.facebook.com/gzu.library](http://www.facebook.com/gzu.library) by “liking” the page. The Facebook page provides clients with Library news, events and answers to on-demand and frequently asked questions (FAQ).

---

**Activity 1.2**

1. Provide an evaluation of a library known to you, as an effective learning environment?
2. Identify three areas a School Librarian, and two areas a Duty Librarian can assist you
towards fulfilment of your learning goals?

3. In a Library setting discuss what is:
   a. Format classification of information resources. Give examples of Library collections in this category?
   b. Content classification of information resources. Give examples of LC subjects in this category?

4. Why is Information Literacy important in the context of Information Access & Retrieval, Current Awareness Services, and Selective Dissemination of Information?
UNIT TWO (2)

FORMATS / TYPES OF INFORMATION SOURCES

2.0. Introduction

It has been increasingly getting complex for users to effectively navigate the vast information resources. The library is increasingly taking the challenge as an information intermediary of connecting users with the resources. This unit seeks to provide an in depth analysis of all formats or types of information sources.

2.1. Learning Objectives

By the end of this unit you should be able to:

- Differentiate types and formats of information.
- Determine and use different sources of information.
- Identify and use Internet information sources.
- Understand the role of periodicals in the research process.

2.2. What are information sources?

These are means by which a person is informed about something or knowledge is provided or shared with someone, a group of people or an organization.

Information sources could be observations, people, organizations, speeches, documents, pictures, art work.

2.2.1. Producers/Creators of Information Sources

There are three main producers/creators of information. These are:

<table>
<thead>
<tr>
<th>Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>- Departments e.g. Agritex</td>
</tr>
<tr>
<td></td>
<td>- Agencies e.g. Statistical Agencies - ZimStats</td>
</tr>
<tr>
<td></td>
<td>- Ministries e.g. Ministry of Higher Education</td>
</tr>
<tr>
<td></td>
<td>- Parastatals e.g. ZESA</td>
</tr>
</tbody>
</table>
2.3. Types of Information Sources

The three types of information sources are:

- Primary
- Secondary
- Tertiary

2.3.1. Primary Sources

Primary sources are original materials, artefacts or documents on which other research is based and enable students and other researchers to get as close as possible to what actually happened during a particular event or time period. They offer contemporary accounts from participants or people directly involved in an event. In scientific research, primary sources present original thinking, report on discoveries, or share new information. Examples of primary sources include: diaries and literary memoirs, letters and correspondence, artistic works (musical and visual), news segments and transcripts, speeches, interviews, editorials, and legal documents and statistics. Primary sources enable you to work with the raw material and draw your own conclusions. The following questions can help you determine if you have a primary source:

- **Author**: What is the author's relationship to the material or event described?
- **Purpose**: What is the purpose of the content?
- **Publication Date**: Is the date of the publication close to the event described?

2.3.2. Secondary Sources

Secondary sources address or analyse events, people, works, or topics after the fact, unlike primary sources which provide first-hand accounts. Secondary sources describe, discuss, interpret, comment upon, analyse, evaluate, summarize, and process primary sources. A secondary source is generally one or more steps removed from the event or time period and
are written or produced after the fact with the benefit of hindsight. Secondary sources often lack the freshness and immediacy of the original material. Examples of secondary sources include: newspaper articles, journal and magazine articles, and encyclopaedias, books. Secondary sources allow you to broaden your research by providing background information, analyses, and unique perspectives one or more steps removed from an original event or work. The following questions can help you determine if you have a secondary source:

- **Author**: What is the author's relationship to the material or event described? Does his or her knowledge stem from personal experience or not?
- **Purpose**: What is the purpose of the content? Is the author interpreting previous events?
- **Publication Date**: Is the date of the publication further away from the event described?

### 2.3.3. Tertiary Sources

Tertiary sources provide overviews of topics by synthesizing information gathered from other resources. Tertiary resources often provide data in a convenient form or provide information with context by which to interpret it. A tertiary source is an index and/or textual consolidation of primary and secondary sources. For example, articles on Wikipedia would be classified as tertiary sources. Some tertiary sources are not to be used for academic research, unless they can also be used as secondary sources, or to find other sources. The distinctions between primary, secondary, and tertiary sources can be ambiguous. An individual document may be a primary source in one context and a secondary source in another. Encyclopedias are typically considered tertiary sources, but a study of how encyclopedias have changed on the Internet would use them as primary sources. Time is a defining element. Depending on the topic of research, a scholar may use a bibliography, dictionary, or encyclopedia as either a tertiary or a secondary source.

### 2.4. Sources of Information

Information could be obtained from (but not limited to):

- Human sources
- Library
- Archives
- The Internet

#### 2.4.1. Human Sources

- Communication with peers / colleagues is a good way of obtaining vital information. For example, doctors have been found to rely on their colleagues for information in order to solve a patient’s problems.
- Informal sources of information are valuable and are readily available.
- If the right person is contacted, quality and up-to-date information will be obtained.
- There may be some elements of bias in the information provided by human sources.
Individuals may provide information from their own point of view or exaggerate it.

2.4.2. Libraries

- Libraries collect quality information in a wide variety of formats.
- Librarians select books, journals, magazines, databases, CDs, DVDs, government reports for use by their patrons.
- This selection process enables libraries to collect resources considered to be reliable, relevant and valuable.
- Library resources unlike those found on the Internet go through a review process.
- Libraries provide access to reference resources, books, periodicals and other resources in both print and electronic formats for use by the patrons.
- Some library resources can be loaned to users.

2.4.3. Archives

- Archives are places where records of all types and formats are kept and made accessible for research and other purposes.
- Archives store, preserve and make accessible records of enduring value, unique and usually one of its kind items.
- They are a good place to find both published and unpublished primary sources.
- Personal and institutional records of all types can be found in archives, as well as media, ephemera, oral histories, and even artifacts.
- Archival resources are rare and irreplaceable as a result they are not on loan.

2.4.4. The Internet

- The Internet is a network of computer networks around the world that enable people to access information and to communicate with each other.
- The World Wide Web (WWW) provides the technology needed to navigate the resources on the Internet.

No innovation in history has so profoundly changed our lives as the Internet (Blonde, Cook and Dey, 1999). The Internet contains all kinds of information sources including among others:

- **Scholarly Databases** *i.e.* eBooks and, or eJournals databases; indexes and abstracts collections.
- Bibliographic information *i.e.* library catalogues.
- Reference sources *i.e.* encyclopaedias, dictionaries, handbooks, etc.
- Multimedia *i.e.* audio, video and graphical sources of information.
- Grey literature *i.e.* technical reports, government documents, thesis/dissertations, etc.
Subject related gateways, portals and digital / institutional repositories *i.e.* AGORA / HINARI.

### 2.5. Formats of Information Sources

Information is of great diversity and in various formats. The two main formats of Information sources are **print** or **non-print**.

<table>
<thead>
<tr>
<th>Format</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print</td>
<td>Books, periodicals, bibliographies, maps, indexes and abstracts, photographs, government documents, technical reports, etc</td>
</tr>
<tr>
<td>Non-print</td>
<td>Audio visual, multimedia, microform, electronic books and electronic journals, images, texts/records from the Internet, Web documents, etc</td>
</tr>
</tbody>
</table>

#### 2.5.1. Print Books

GZU Library’s core collection is in print book format which is mostly non-fiction, that is, they are academic and subject orientated developed to support teaching, learning and research. The Library also has online book collections (eBooks) covering various disciplines offered at Great Zimbabwe University.

#### 2.5.2. Print Periodicals

Periodicals are resources that are published continuously on a regular basis, whether daily, weekly, monthly, quarterly, or otherwise. Periodicals, by nature focus on a narrower topic. Newspapers, magazines and journals are periodicals. Most periodicals are in print form, and may have an Internet version with some or all of the articles available online. An increasing number of legitimate publications are being published as electronic journals, with no print counterpart.

##### 2.5.2.1. Journals

Journals, also called *academic journals or scholarly journals*, differ from other periodicals in several respects. Journals provide a means of communication among scholars and other experts. Scholars use these publications to report research methods and findings to their peers. Most of them are published by learned societies and professional organisations, and many do not accept advertising. Scholarly journals typically have a thorough review process in which other experts read and comment on the research being reported in order to ensure a high standard. They aim to produce current research information in a particular field or subject. The Library subscribes to
A scholarly article contributes to the body of knowledge on that topic. The author of a book spends a good deal of time gathering and analysing information, testing theories, and drawing conclusions. An editor then reviews the manuscript at least once and sometimes suggests major revisions. The process of physically producing a book might take a year or more. By the time a book is prepared, printed, purchased by a library and put on the shelf for circulation, the information might be two or more years old. Scholarly journals frequently have rigorous submission standards. Articles are usually either peer-reviewed (also known as refereed) and can also be “blind-refereed.”

Another advantage for journals is the variety of opinions and viewpoints readily available. The work of writers with different backgrounds, different qualifications and different beliefs can be found easily. However, researchers should not assume that journals (and periodicals in general) are more valuable than books because of their currency. Many articles that report on timely issues and recent events lack the analysis, the background information and the broad perspective offered in books. They also lack grass root coverage of terms and issues in a subject area and tend to cover a particular subject area in a highly specialised way, which might not be ideal for elementary learning. The need for up-to-date information depends on the topic and on your approach to it.

Periodicals are not limited to the print format as some periodicals are published online, digitised information residing in a remote database or in DVD/CD-ROM format. The periodical publishing cycle is the second quickest one, coming in only behind the Internet as a publishing format. The bulk of published information (either online or print) appears in periodical format! The content of a periodical article reflects the opinion that is the most contemporary treatment of an event or issue. If you are interested in reviewing the evolution of opinion or thought on a particular topic, periodical literature is the best place to look for this change over time. Periodical literature may also be the only source of information on some topics.

2.5.3. Multimedia

Multimedia resources are resources that come in audio visual format such as DVD/CD ROMs, Video Cassettes, and Audio Cassettes and generally through television and radio programming. They add a new dimension to teaching, learning and research experience. Multimedia resources have added advantages of being able to add non-verbal communication to information dissertation.

2.5.4. Reference Tools

It is important to be familiar with several formats of information sources. You may be asked, for instance, to use 2 books and 3 articles as sources for a term paper. Even if you are not
required to use specific resources, it is always good to know your options. One common misconception is that anything can be found easily on the Internet. Often, traditional resources, such as books, are easier to use and contain better information.

According to Behrens (1994), a reference source supplies authoritative information. It is intended to be referred to briefly for specific factual information only, and not to be read from cover to cover. To facilitate its ease of use, particular attention is paid to the systematic arrangement of items within it. There are many kinds of reference sources such as dictionaries, encyclopaedias, directories, maps and atlases (mostly in print, but also in electronic format).

2.5.4.1. Encyclopaedias
According to Katz (1997), an encyclopaedia makes an effort to gather information either from all branches of knowledge or from a single subject area and arrange it in alphabetical order, for ready reference. Behrens (1994) defines an encyclopaedia as a reference source which contains information on all branches of knowledge, or alternatively extensive information on a limited subject field. Articles in encyclopaedias are usually arranged in alphabetical order, for example, Encyclopaedia Britannica.

An encyclopaedia usually gives detailed survey articles complete with references, bibliographies and cross references within the encyclopaedia for further reading. It may also give brief and informative data such as dates of births of famous people, geographic information and historical events.

Encyclopaedias are an excellent resource for starting research on a topic and their articles give you introductory information on a topic. Encyclopaedias traditionally provide comprehensive coverage of an entire area of knowledge and are a great tool for starting your research. There are general encyclopaedias and subject encyclopaedias, and they differ as to the level of detail provided and the complexity of the writing. Encyclopaedias are good for fact-finding, getting general background information about a subject or starting a research project. This information may help you choose a topic, or give you ideas for broadening or narrowing a topic. Online encyclopaedias have the advantage of providing access to multimedia resources.

2.5.4.2. Almanacs, yearbooks and handbooks
Almanacs, yearbooks and handbooks are often single volumes which summarise large amounts of facts about people and organisations, current and historical events, countries, statistics, and popular culture items like sports, entertainment, zip codes. They can frequently provide quick answers to factual questions, but are not useful for extensive research. Yearbooks are issued by encyclopaedia companies and provide a quick update to events occurring during that year. Handbooks usually focus on a particular subject, while almanacs are broader in scope.
2.5.4.3. **Biographical sources**
Katz (1997) describes biographical sources as the self-evident sources of information on people distinguished in some particular field of interest, for example, *Who is Who; Current Biography*. A biography is a written description of the events of a person’s life. It is simply the history of a lifetime. It narrates the most important facts of someone’s life, his or her childhood, adolescence, educational background, professional life, marriage, children, and most outstanding achievements. As such, it provides a brief summary of data about a person, fairly detailed information about a person, or references (citations) to other short or full-length biographies written about the person. Some cover living people and some dead people, a few cover both.

2.5.4.4. **Dictionaries**
According to Katz (1997), a dictionary usually gives the modern meaning of words whilst Behrens defines a dictionary as a list of the words of a language or languages, or a list of words relating to a specific subject. The words are arranged in a systematic way, usually alphabetically. They are general and subject dictionaries. Subject dictionaries define terms in a particular field *e.g.* *Glossary of Business Terms and Definitions*.

2.5.4.5. **Directories**
Directories exist to direct readers in some way. Whittaker (1963) observes the three main questions directories set out to answer as:

- Who lives at a stated address;
- What is the address of a particular person or place; and,
- What firms (or persons) are there in a certain line of business?

Examples of directories are telephone directories or a directory of companies in a particular place.

---

**Activity 2.1**

1. Discuss the advantages of print sources over non-print sources?
2. Discuss the advantages of using journals as a source of research information?
3. "Non-prints, as new sources of information, provide added benefits in the uptake of information by students". Discuss this statement in relation to electronic and multimedia information?
4. Distinguish the difference between primary and secondary sources of information, giving examples of each.
UNIT THREE (3)

INFORMATION ACCESS TOOLS: LOCATING AND ACCESSING INFORMATION

3.0. Introduction
Information access tools are utilities that are used to locate information. They are information finding aids that are meant to enable users to locate pieces of information quickly and easily in a source that contains large amounts of information such as a book, library, the internet or a database. Different access tools are used to find different kinds of information. Some of the most commonly used information access tools are: Indexes, Bibliographies, Abstracts, Catalogues, and Web Search engines. This unit will look at various tools that an information seeker can use to locate both print and electronic information sources. It will also give details on how to develop an effective search strategy and the different types of advanced search strategies that can be employed.

3.1. Learning Objectives
By the end of this unit you should be able to:
- Understand information databases and database structure.
- Identify and differentiate information access tools.
- Find information using different search tools.
- Locate and access library information resources.
- Recognise numerous advantages of electronic information sources.

3.2. Information Databases
A database is a collection of data arranged for ease and speed of search and retrieval. One use a database to get the exact type of information he / she needs quickly. Databases are created to manage distinct sets or types of information. Specialised databases are the smallest, most focused search tools on the Web. Information that is stored within a specialised database is usually limited to a specific topic, for example: Education, but provided in-depth. Although a Web index can help you locate a specialised database on a topic of interest, generally you cannot use it to find information stored within the database. You must locate and search these databases directly.

3.2.1. Database Structure
Databases consist of records of information. Each record in a database is further divided into specific fields. These records are often grouped into larger files within the database, like drawers within a filing cabinet.
For example, a record in a bibliographic database, such as a library catalogue, might contain the following fields:
- Author
- Title
- Subject (Keywords)
- Publisher
- Place of Publication

Why is this important? Because database records contain fields, you can target your search more effectively. Searchable databases allow you to specify which field you wish to use for your terms or keywords. In the illustration below, a search for "college binge drinking" in the title field found a useful article on this topic.

<table>
<thead>
<tr>
<th>Author</th>
<th>Anonymous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>National study finds increase in college binge drinking</td>
</tr>
<tr>
<td>Appears In</td>
<td>Alcoholism &amp; Drug Abuse Week, v12n13 Mar 27, 2000, p.4-6</td>
</tr>
<tr>
<td>Abstract</td>
<td>A Harvard School of Public Health study has found a rising prevalence of frequent binge drinking on college campuses across the country, with overall binge drinking remaining constant. The survey found that stepped-up efforts by college administrators in recent years to address the problem of binge drinking have not resulted in decreases in binge drinking behavior.</td>
</tr>
<tr>
<td>Subjects</td>
<td>College students, Alcohol use, Studies, Colleges &amp; universities</td>
</tr>
<tr>
<td>Article Type</td>
<td>News</td>
</tr>
</tbody>
</table>
An example of an information database is a library catalogue. It is a database describing information resources located in a given library. Nowadays most of these catalogues are available electronically on computers and accessible via the World Wide Web, popularly known as OPACs (Online Public Access Catalogue) or WebPACs (Web Public Access Catalogue) respectively.

3.3. Information Access Tools
Libraries provide a number of tools to help clients identify specific information. Information access tools fall into the four broad categories listed below:
- Web Public Access Catalogues (WebPACs).
- Web Search Tools (simple & meta search engines)
- Online bibliographic databases.
- Digital Libraries / Institutional Repositories

3.3.1. Web Public Access Catalogues (WebPACs)
The WebPAC is an online bibliographic database of a library collection that is available to the public. It is an electronic database of titles of information a library has in stock. The collection includes books, journals, multimedia, electronic resources and any other sources of information the library has in its collection. WebPACs are mainly concerned with searches for bibliographic records, at the level of items rather than full-text content. With the arrival of the Internet, most libraries have made their OPAC accessible from a server to users all over the world, hence the term WebPAC.

The most basic function of the WebPAC is the ability to browse the entire library collection. It can be used to look for something specific or general. The default mode is the basic search function, but there is also an advanced search option. The advanced search screen allows you to conduct a multiple term search while the basic search only offers one entry box. Multiple term searches are helpful if you are searching for something specific and you want to be as precise as possible.

3.3.2. Web Search Tools
There is a lot of great material on the World Wide Web - primary sources, specialised directories and databases, statistical information, educational sites on many levels, policy, opinion of all kinds, and much more - however you need the right tools for finding all of this wealth of knowledge, much available for free, other for a fee.
3.3.2.1. **Search Engines**
A search engine relies on computer programmes called spiders or robots to crawl the World Wide Web and log the words on each page. With a search engine, you type keyword(s) that are related to a topic into a search "box." The search engine then scans its database and returns a file with links to websites containing the word or words specified. The downside of these databases is that they are very large, so these search engines often return thousands of results. *Without search strategies or techniques, finding what you are looking for can be quite frustrating and time consuming.* Therefore, it is essential you apply some methods or technique that can narrow results and push the most relevant pages to the top of the results list (Murray Memorial Library, 2008). Examples of search engines includes *google*, *yahoo* etc.

3.3.2.2. **Meta - Search Engines**
Meta-search engines search several major search engines at once. Meta-search engines do not crawl the Web or maintain a database of web pages. Rather, they act as the middleman, passing the query to the major engines it uses, usually 10 or more, and then returning the results. Meta-search engines search several major engines at once. Further, meta-search engines provide a quick way to determine which engines are retrieving the best match for your information need; allowing you to further concentrate your search using the search engine that is working best for you. Simple searches seem to work best when using this Internet Search Tool (Murray Memorial Library, 2008). An example of a meta-search engine is *dogpile*.

*NB: One other thing to keep in mind is that meta-search engines can produce large quantities of information that can be difficult to wade through.*

3.3.2.3. **Subject Directories**
Directories are useful when finding information on a topic where you don't have the exact idea of just what you may need (Murray Memorial Library, 2008). A wonderful feature of many of the large directories is that they often include a *keyword* search option which can eliminate much of the need to work through numerous levels of topics and subtopics. Since directories cover only a small fraction of the pages available on the World Wide Web, they are most effective when "hunting" for general information on popular or scholarly subjects. *Remember, if you are looking for something quite specific, use a search engine.*

3.3.2.4. **Open Access Electronic Journals and Articles**
If an article is "Open Access" (OA), it means that it can be freely accessed (full text) by anyone using an internet connection. Open Access permits any users to read, download, copy, distribute and print articles from journals without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Open Access resources are basically searched using *search engines* or in some specific cases the *online database*. This means that the potential readership of Open Access articles is far greater than that for
material where the full-text is restricted to subscribers. It is important to point out that Open Access does not affect peer-review. Open Access repositories supplement and do not replace journals. A growing number of researchers and publishers are developing collections of open access journals. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited."

3.3.2.5. Deep Web - The Invisible Web

The Invisible Web mainly refers to the vast repository of information that search engines and directories don’t have direct access to, like databases. Unlike pages on the visible Web (that is, the Web that you can access from search engines and directories), information in databases is generally inaccessible to the software spiders and crawlers that create search engine indexes. Many of the Library’s online databases are not accessible via search engines and students must directly use the database address by using the site’s URL. Above all, search engines cannot reach material behind a ‘pay wall’ - that is, a registration scheme that requires you to pay to access a site’s content. Many free sites that require registration also cannot be searched. Finally, search engines usually can’t access material held in databases, or material displayed in Flash animation software.

3.3.3. Online Databases

Did you know that there is a virtual treasure trove of information that is not visible through the traditional search engines? Thousands of searchable databases, archives and other information sources deliver highly-targeted information for a much improved searching experience.

The Library offers access to several Full-Text Online databases, where you may search the periodical literature of many subject areas. You may then read, download, print, or email relevant articles. Online Databases are also referred to as Specialised, Research Databases or simply Electronic Resources (eResources). These eResources are information databases which are accessed by computer, via the World Wide Web (the Internet). There are now an increasing number of electronic information resources that the Library is making available to the academic community. Currently the University has access to over 100,000 eJournals and eBooks. Access arrangements for these electronic publications has been pre-determined for you i.e. IP based. Where applicable, please use username & passwords provided.

3.3.3.1. Types of Online Databases

a. Full-Text Databases

Full-text databases are those which supply the complete text of information in the database. While a bibliographic database provides a description, a full-text database
includes complete articles or chapters from an e-journal or e-book respectively, that you can view on your computer screen. *Almost all of the Library’s online databases are full-text databases.*

Examples of the Library’s Online Databases include; *eBrary, Emerald, Taylor & Francis, JSTOR.*

b. Bibliographic Databases

Bibliographic databases identify and describe writings or published works (books, articles, maps, etc.). They provide citations *(a listing of information about the item)* and sometimes include abstracts *(summaries).*

c. Numeric Databases

These databases provide mostly numeric data *(numbers)* in chart or table format. In some cases, they provide *raw data (survey results, scientific studies, etc.)* that can be downloaded to your computer, so that you can analyse it and create your own reports.

d. Directory

Directories provide brief, factual or descriptive information and are used for quick look-ups *(find an address, confirm a name, locate a place, etc.)*.

e. Multimedia

Databases that contain various types of communication media (text, graphics, sound, etc.).

3.3.3.2. Subject Portals

Subject Portals, are Subject Gateways *i.e.* websites that harvest links to online databases of a particular subject area. They are not online databases, but houses lists of subject based online databases and where to locate them. Examples of subject portals / gateways include:

- HINARI *(Health InterNetwork Access to Research Initiative).*
- AGORA *(Access to Global Online Research in Agriculture).*
- OARE *(Online Access to Research in the Environment).*
- Essential Health Links Gateway
- E-Journals.Org
- Worldwide Science Gateway

3.3.3.3. Advantages of Online Databases

Online Databases offer potential solutions to information shortages and the range of these types of resources is now considerable and growing all the time.
Online databases’ specialized content, including digital subject libraries, citations, and full-texts of peer-reviewed articles, **usually unavailable through googling the Internet**.

Online Database provides more current information than print resources.

Searching online databases may yield more qualitative and scholarly relevant results.

Access to a wider range of material than might otherwise be available through your local library

Online resources have the additional advantages of allowing remote access and being available to many users at the same time.

Online Databases are typically accessed over the Internet and Web. They can thus be accessed from virtually anywhere, and at anytime. They are not tied to physical location and operating hours of a traditional library. Digital library collections can also be delivered on CD-ROM media to users with inadequate network connectivity.

Availability of full text electronic documents enable digital libraries to support advanced and novel search and display features including full text search, relevance ranking, and hierarchical document browsing.

Online Databases can meet concurrent access requests for the same electronic document by easily creating multiple instances (or copies) of the requested document. Online Databases can thus meet the requirements of a much larger population of users.

Online Databases can provide access to content in different and more appealing forms, including animation, graphical, audio and video formats; support post processing of information (e.g. conversion of a spreadsheet to graphical form); and adapt to the special needs of Physically disadvantaged users.

Through appropriate metadata and information exchange protocols, Online Databases can easily share information with other similar Online Databases and provide enhanced access to users.

Since electronic documents are not prone to physical wear and tear and their exact copies can easily be made, Online Databases facilitate preservation of special and rare documents and artefacts by providing access to digital versions of these entities.

**3.3.4. Digital Library / Institutional Repository**
Digital Libraries retain several qualities of traditional libraries such as a defined community of users, focused collections, long term availability, the possibility of selecting, organizing, preserving, and sharing information resources.

3.3.2.1. Why Digital Library

Digital libraries are considered by many to be a key function of indigenisation of knowledge (localisation of content).

- They enable the creation, organization, maintenance, management, access to, sharing and preservation of Academic Literature collections.
- Digital libraries are being created today for diverse communities and in different fields: education, science, culture, development, health, governance and so on.
- The creation and sharing of information through digital library collections has become an attractive and feasible proposition for library and information professionals around the world.
- Internet resources are volatile, can be here today, gone tomorrow might be useful one day and useless the next. Digital Libraries deals with the topical issue of preservation and access of information excellently.
- They allow users to gain online access to and work with electronic versions of full text documents.
- They allow users to directly access and use the documents they have found.
- Minimise the topic issue of Bandwidth (over WAN).
- They allow users to quickly find documents by using a computer and a network connection (Improved Access).
- Many digital libraries also provide access to the multimedia content like audio and video.

3.3.5. Institutional Repository

An Institutional Repository (IR) is an online archive for collecting, preserving, and disseminating digital copies of the intellectual output of an institution, particularly a research institution. An institutional repository can be viewed as a “...a set of services that a university offers to members of its community for the management and dissemination of digital materials created by the institution and its community members” (Lynch, 2003). It is most essentially for a university to commit to the stewardship of IRs, including long-term
preservation where appropriate, as well as its continuous update, organization and access to the university community and beyond.

The development of an IR redefines the production and dissemination of scholarly material within an academic community. The objective of such a repository is to support the organization’s goals. Some institutions use an IR as a positive marketing tool to enhance their reputation. For a university, this includes materials such as monographs, eprints of academic journal articles—both before (preprints) and after (postprints) undergoing peer review, as well as electronic theses and dissertations (ETDs).

An Institutional Repository might also include other digital assets generated by academics, such as datasets, administrative documents, course notes, learning objects, or conference proceedings. Deposit of material in an institutional repository is sometimes mandated by that institution.

Some of the main objectives for having an Institutional Repository are to provide open access to institutional research output by self-archiving it, to create global visibility for an institution’s scholarly research, and to store and preserve other institutional digital assets, including unpublished or otherwise easily lost (“grey”) literature such as theses, working papers or technical reports.

An Institutional Repository is a means to ensure that the published work of scholars is available to the academic community even after increases in subscription fees or budget cuts within libraries (Bhardwaj, 2014 & Boufarass 2011). The majority of research scholars do not provide free access to their research output to their colleagues in an organization (Ahmed and Al-Baridi 2012). IRs provide scholars with a common platform so that everyone in the institution can contribute scholarly material to promote cross-campus interdisciplinary research.

3.4. Search Tools in a Document

3.4.1. Table of Contents

It is a list of the parts of a book or document organised in the order in which the parts appear in the document. The contents usually includes the titles or descriptions of the first-level headers, such as chapter titles in longer works, and often includes second-level or section titles within the chapters as well, and occasionally even third-level titles. Printed tables of contents indicate page numbers where each part starts, while online ones offer links to go to each part.

In some cases, tables of contents contain a high quality description of the chapter's but usually first-level header's section content rather than subheadings. Therefore, the contents page provides an excellent overview of the usefulness of a book. It is helpful not only for pointing on the specific location (pages) where to get the required information but also for the detailed information on what the book has.
3.4.2. Index

An index is a list of words or phrases ('headings') and associated pointers ('locators') to where useful material relating to that heading can be found in a document. The pointers or locators are usually page numbers, paragraph numbers, book sections, or chapters. In a typical back-of-the-book (BoB) index, the headings might include author names and the pages they are cited, subjects, place names events and concepts selected by the book writer as being relevant and of interest to a possible reader of the book. The pointers are typically page numbers, paragraph numbers or section numbers. If you have got some keywords already, the index becomes a very useful tool - you can look up your keywords in the index and go to the specific pages where the information is located.

According to Cook (1981) stand alone indexes are tools designed to make readily available information that appears in other separate publications. The purpose of an index is to save the time of the reader by grouping certain related concepts or subjects and giving their locations in a document. An index as an aid to finding information may contain cross references all over the book linking related topics or subjects e.g. see or see also.

3.4.2.1. Author Index

Author or name index as the name implies provides an alphabetic list of authors in a document and the page numbers where they are cited.

3.4.2.2. Subject Index

A subject index lists subjects and their related concepts in a book. It makes extensive use of cross referencing to aid the reader to quickly find related terms and concepts in a document.

Activity 3.1

1. Identify at least three different collections one can search for in a Library WebPAC. Briefly explain each one of them?
2. Online Databases are useful sources of research information. Explain why?
3. An institutional Repository provides new opportunities for information users. Discuss this statement?
4.0. Introduction

Effective information retrieval and search strategies allow students to find the information they want amongst the huge number of online resources available and “get the most from electronic resources”.

- Google claims it searches over 130 trillion web pages (https://www.google.com/insidesearch/howsearchworks/thestory/).
- GZU Library subscribes to more than 200,000 full text e-books and e-journals online (http://studentportal.gzu.ac.zw/library/index.php/en/electronic-collections/online-databases).
- Newspapers, databases, books, company web pages, dictionaries, encyclopaedias, individual home pages, etc, are also online.

So, information searching skills enable you to make efficient use of limited access to PCs and bandwidth and also save time and money. REMEMBER... you already have searching skills that are useful. These can be enhanced by reading, practising and understanding this unit.

4.1. Learning Objectives

<table>
<thead>
<tr>
<th>By the end of this unit you should be able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formulate appropriate strategies for location and retrieval of required resources.</td>
</tr>
<tr>
<td>Learn search strategies &amp; techniques to help improve the quality and relevancy of your search results.</td>
</tr>
<tr>
<td>Understand the value of developing a search strategy before using the resource discovery tools.</td>
</tr>
</tbody>
</table>

4.2. Defining Information Retrieval

Information retrieval (IR) is the area of study concerned with searching for documents, for information within documents, and for metadata about documents, as well as that of searching databases, and the World Wide Web (Wikipedia, 2016).
4.3. **EISENBERG’S BIG SIX MODEL**

In everyday life, students and researchers alike all suffer from information overload. There’s just too much “stuff” out there, and not easy to keep up. Students are surrounded by information, but never seem to find what they want, when they want it, and in a form they want it so that they can use the information effectively. One solution to the information problem, the one that seems to be most often adopted in schools, is to speed things up - trying to pack in more and more content, to work faster to get more done. But, this is a losing proposition. Speeding things up can only work for so long. Instead, we need to think about helping students to work smarter, not faster. There is an alternative to speeding things up. It’s the smarter solution—one that helps students develop the skills and understandings they need to find, process, and use information effectively. This smarter solution focuses on process as well as content. Some people call this smarter solution information literacy or information skills instruction. We call it the Big6.

The Big6 is an information problem-solving approach developed by Michael B. Eisenberg and Robert E. Berkowitz. It is the most popular model for information skills (retrieval). Eisenberg’s Big Six Skills represents a systematic approach to information problem-solving. It is appropriate and useful to initiate the six logical steps, whenever an individual has an information oriented problem. Further, it is vital to note that there are six broad skill areas necessary for successful information problem solving. As such you need to develop a range of competencies within each skill area. Eisenberg (1990) notes that “Each stage is necessary for the successful resolution of an information problem.” Further, the exact order of stages and the amount of time spent on a given stage may vary greatly from situation to situation. Each skill area is briefly outlined below:

4.3.1. **Defining the problem-task definition**

According to Eisenberg (1990.5) “Information problem solving begins with a clear understanding of the problem at hand from an information point of view” In order to solve an information problem, you need to determine the range and nature of tasks to be accomplished. For more general problems: you need to determine the information aspects of the problem. What are the questions that need to be answered, what kind of information do you need in order to tackle the problem? As such determine the depth and breadth of the topic.

Establish the type of information required: is it any information, scholarly information, up to date information? By spending time considering the information problem and then articulating a clear understanding of (a) the information problem (b) specific information needs related to that problem, you can move much more efficiently toward solutions.
4.3.2. Information Seeking Strategies

After articulating the problem, attention turns to the range of possible information sources that are available to solve the task as defined. Information seeking strategies involves making decisions with regard to the range of information sources appropriate to meet the defined task. What strategies for seeking information are possible? For instance, in most cases there is not just one right source of information to answer an information need; there are likely to be a number of alternative sources and approaches that can successfully lead to resolution of the problem. As such the following questions can be asked:

- Can I find the information on this topic?
- Where can I find the information I need?
- Which are the best possible sources?
- What are my best strategies for finding information on this topic?
- Which databases or websites are the best choices?
- Which sources do I already have?

Further, choices are narrowed by weighing various criteria such as accuracy, reliability, ease of use, availability, comprehensibility, and authority.

4.3.3. Location and Access

Location and access is the implementation of the information seeking strategy.

- Locate sources
- Where are these sources?
- Find information within the sources-where is the information within each source?
- Index-search engines, electronic indexes, online library catalogues.

4.3.4. Selecting the best information source

When you select material and information for your assignments, it should never be used indiscriminately, there should be a continual evaluation process occurring. Evaluate information for its relevance and usefulness to your work, and its quality. When looking at a source, ask yourself the following questions:

a. Will this information be useful?
   - Is it relevant to my task?
   - Does it relate to my topic?
   - Does it help me answer a question or solve a problem?

b. Will this information add to my knowledge?
   - Does it help me learn more about the topic?
   - Does it fill background information?
   - Does it provide specific information?

c. What will I use this information for?
Could it help to form any central argument?
Will it help focus my thoughts?
Can I use it as evidence?
Will it help me locate other information?

d. How recent is this information?
   Is it out of date, or is it still useful?
   Is it the most up to date? Does it need to be?

e. How reliable is this information?
   Does this material come from a reputable and unbiased source?
   Is the author an acknowledged expert in the field?

f. How understandable is this information?
   If I find it difficult to understand, do I have to use it?
   Can I choose other information that I do understand?

g. How will I use this information?
   Does it provide evidence or support for my ideas?
   Does it provide a good example?
   Where could I put it in my assignment?

h. Do I really need to use this information?
   How does it help me answer the task?
   Is it essential information?
   Is it the best example or most relevant piece of evidence? Do I have better material?
   What does it add to my work? Would my assignment be just good without it?
   Have I already supported my argument or point of view well enough?
   Do I have enough information to begin my task?
   How will I cite my sources?

By answering the above questions, you will be gearing yourself towards the best information you want.

*NB: Detailed information on how this can be achieved is found in Unit 5 that deals with the evaluation of information sources.*

### 4.3.5. Synthesis

Organising information from multiple sources.
Presenting the information.

*Topic covered in detail in Unit 5*

### 4.3.6. Evaluation

Judge the product- was the information problem-solved?
Judge the process- what have I learned?
Decide whether or not an assignment is finished, judge the product’s effectiveness.
4.4. Information Search Strategies

Information search refers to learner-initiated efforts to obtain further task-related information from books or other non-human sources when undertaking an assignment. It includes comprehensive plans for finding information, defining the information need, and determining the form in which it is needed, if it exists, where it is located, how it is organised, and how to retrieve it. Below are WebPAC and Online Databases search options:

4.4.1. WebPAC Search Options

There are four main types of searches that one can conduct. To start searching, click the drop down menu just before the search box to see a list of ways in which you can search the WebPAC. You can search by Author, Title, Keyword or Subject;

4.4.1.1. Keyword / Subject (the default search)

Type keyword(s) or phrase(s) and click on GO to search. This type of search retrieves the largest number of results because the system searches all indexes at once. For example, the phrase Transportation and Planning will retrieve records with the words transportation and planning in any field, and also the words in any field in the same record.

Start with this search if you do not know the actual subject. You can search for an exact phrase with this type of search by using quotation marks. For example, “global warming” will retrieve all records that have the word global next to the word warming. Articles, prepositions and punctuation are not needed as they are ignored by the system.

Examples:

- Articles: a, an, the
- Prepositions: at, in, to, by
- Punctuation: apostrophes, colons, commas

For hyphenated words, you may want to try searches both with and without the hyphen.

4.4.1.2. Author

If you know the author’s full name, you can conduct an Author (last name first) search. Always enter the author’s last name, followed by the first name. For example, if you want to search the Online Catalogue for works by John Steinbeck, you would select Author (last name first) on the drop down menu and type Steinbeck, John in the search box. (An author can be either a person or an organization, such as a state agency. Click on Go button to search.)
If no matching author name is found in the catalogue, the system will provide an alphabetical listing of authors nearest the spelling entered.

### 4.4.1.3. Title
Each information source has got a **title** and that **title** may be used to locate the information source using the WebPAC. Select **title** from the drop down menu and enter all or part of the title into the search box. Omit the words *a, an, or the* from your search when they appear at the beginning of the title. For example, to search for *The Sun Also Rises*, type *sun also rises*.

### 4.4.1.4. Subject
The subject refers to some form of controlled keyword. Librarians do not just assign keywords to cover certain disciplines; they use some form of agreed and standardised keywords or phrases which are known as **subjects or subject headings**. Enter a **subject phrase or a subject word(s)** in any order and select subject from the drop down menu. The system will return records which include the search term(s) in the **subject headings** attached to those records. If the word(s) or phrase is not found in any subject headings, the system will return an alphabetical list of subject headings nearest the spelling entered. For example, the following searches yield the same results in this search mode:

- Acid Rain
- Acid and Rain

### 4.4.2. Searching the Library WebPAC

**Step 1**
Go to the **Library WebPAC Homepage** available at [http://studentportal.gzu.ac.zw/library/index.php/en/](http://studentportal.gzu.ac.zw/library/index.php/en/) Given below is how the page looks like:
Step 2
Select your search option on the Dropdown Menu e.g. to search by Subject / Keyword, select the Subject option as illustrated below:

Step 3
From the list of search results that you get, click on the Title of the book you want to get the complete bibliographic details as shown below:
Step 4
This is your last step where you view details about the book’s Location, Call Number, and Availability Status as shown below:

![Book title full bibliographic details view](image)

4.4.3. Searching Online Databases

Step 1

Go to Online Databases Homepage
Step 2

Open a Database of your Choice

On the Online Databases Homepage, the databases are listed by name according to School. However, this does not mean if a database is not listed under your School you cannot use it.

Click on the School you belong to, and the following list of eBooks and eJournals relevant to your School will appear:

**Munhumutapa School Of Commerce**

Great Zimbabwe University Library is increasingly making available scholarly Online Databases to the user community via the library website. Currently the University community has full text access to over 150,000 ebooks and 20,000 journal titles.

**Electronic Books Collection**

**Business Management Collection**

Library provides access to full-text scholarly books and subject areas. The content includes: Business, Science, Arts, Religion, Church Administration, Languages, Fiction and Computing.

**EBSCOhost**

Over 15,000 full text, peer-reviewed journals and over 15,000 abstracted and indexed titles. Access to a major database: Academic Search Premier; Business Source Premier (EB); Masterfile Premier; Newspaper Source; Health Source Nursing Academic; Health Source Consumer Edition; Medicine.

**Limited Access**

This portal is primarily on technical materials. Free book centre contains links to thousands of free online technical books and other subject areas, which include: Computer Science, Law, Religion, Church Administration, Languages, Fiction and Computing.

**Emerald Group Publishing Limited**

Access to the world's widest range of management, library and information science journals.

**EBSCO**

Access to full-text journal articles available as searchable. Scanned page images from Access to full-text journal articles available as searchable. Scanned page images from over 800...

NB: You will be prompted for authentication as below.
Step 3

Search the Database
Once you reach the database homepage, there is no need for you to sign in (again) through user name and password. You have direct access since you are logged in automatically as Great Zimbabwe University. Locate the search box and type in your search phrase to begin your search.

No need to sign-in as you are institutionally authenticated

Step 4

Open a Journal Article
From your list of search results, click on the titles of an article of your choice or the Download Full Text option. Further, you can only have full access to articles with a Green Icon. See the illustration below;

To open the book, click on title, table of contents or download link
Step 5

Take note of the Bibliographic Details for your Citations
All the information you need to cite the article are available on the first page, thus making it easier to cite when compared to most of the unscholarly articles from search engines like Google. Below is an illustration of where to find the bibliographic information you need;

4.4.4. Developing a Search Strategy

Before searching the WebPAC, Internet search engines, CD-ROM databases and online databases, you should clarify the information you are seeking by developing a search strategy. You can use the following step by step procedure to develop search vocabulary for almost any research topic;

Step 1: Define or state your topic
Think about your topic. Ask yourself what you want to know about the subject. If possible, write your topic down on a piece of paper. Since most research involves finding the answer to a question or hypothesis, your topic should be written in the form of a question. Be as specific as possible.

Example: Does the violence children see on television influence their behaviour?

Step 2: Identify the main concepts or ideas in your topic
Examine your topic statement to identify the main concepts and underline or circle them. Concepts are the different ideas which make up each unique search topic. Therefore, omit
any words that are not essential to the meaning of your quest. Most topics can be broken down into two or three main concepts.

Do the violence children see on television influence their behaviour?

Example: Violence
Children
Television

The most important thing to remember is that each time you add another concept to your topic, you make it more specific, reducing the amount of relevant material you are likely to find. For example, if the concept “at school” is added to the topic in the example given above, research on child behavior occurring in other social contexts, such as the home and family, is not likely to be retrieved.

Step 3: Find alternate words for your main concepts
Think about alternate spellings including singular and plurals, similar words or synonyms, as well as broader and narrower terms. This step is very important because the tools you will be using to locate information (reference books, catalogues, indexes, databases, etc.) are published by a variety of publishing companies, and they may use different words for the same idea. It is, therefore, imperative to have alternate vocabulary in mind, in case the terms used in your first search yield insufficient results.

Here are some possible synonyms and closely related terms for the main concepts in the example given above:

Violence: aggression, conflict, combat, disorderly conduct
Children: child, juveniles, youth, young people, kids
Television: TV, television viewing, video

Step 4: Connect or combine your words/concepts using Advanced Search Strategies
Construct a search strategy by combining your keywords with various techniques such as Boolean operators and truncation. Boolean operators provide a method for connecting the keywords together in a way that databases and search engines can understand.

NOTE: It is not necessary to use all of the keywords and alternate terms given in the example. Only use them in step five if your initial strategy doesn’t give you useful results.

Step 5: Review your Search Strategy based on your results
Remember, as you go through the research process you are continually evaluating what’s happening in terms of your overall purpose - finding information that meets your needs. If your research goals are not being met, you have the freedom to make the necessary corrections or adjustments at any stage of the process.
4.4.4.1. Advanced Search Strategies

a. **Boolean Search logic**
   The Boolean logic enables you to combine, limit or widen the variety of items found using link terms which are **AND, OR, and NOT**.

   **AND** links two terms together and *narrows* a search. For example, if you search for 'Collaborative Learning' AND 'Teacher', only articles with both of these terms will be retrieved.

   **OR** links terms together and *expands* a search. For example, if you search for 'Collaborative Learning' OR 'Co-operative learning', you will retrieve items in which either of these terms appears.

   **NOT** is used when you want to exclude certain keywords. Be careful when you use this search as you may eliminate some items that could still provide useful information. Parentheses will help you group and order a mixture of Boolean operators:
   For example, (Collaborative learning OR Co-operative learning) AND (Primary OR Secondary)

b. **Truncation**
   Truncation allows you to shorten a word back to the *stem* in order to find resources on variations of the word. It is useful for searching plurals and alternative endings to words. Most databases allow truncation searches, but may use different symbols (*, $, #, ?, !).
   For example, teach* will find teacher, teachers, teaching.

c. **Wildcat**
   Wildcards are similar to truncation but are situated within a word to retrieve variations in spelling. They are particularly useful for capturing American and English spelling. You can often use these symbols at the beginning of a word or in the middle to look for alternative spellings. Many databases use the? as the wildcard symbol.
   For example, colo?r would find colour or color, allowing for British and American spellings.

d. **Phrase Searching**
   Sometimes a phrase is the most appropriate way to search a topic. You can keep words together as a phrase by enclosing them in quotes "". Most databases offer phrase searching and the most common methods of indicating the phrase are quotation marks or brackets. An example could be organised crime. When you want the words to appear next to each other, phrase searching would require the phrase to be in quotation marks. In that case, the example above would be entered as “organised crime” or ‘organised crime’ depending on the database being used.
Activity 4.1

1. Open a Database of your choice:
   a. Identify at least 2 types of information you can access in that database.
   b. Search two journal articles related to your recent assignment in any of your other courses?
2. Identify search tools in a document and briefly explain how they work?
UNIT FIVE (5)

EVALUATION OF INFORMATION SOURCES

5.0. Introduction

Evaluation is meant to assess whether information accessed meets the needs of the reader or is able to help the reader to accomplish a task s/he has. It is important to evaluate information sources for quality. Critical evaluation of the information you find is essential to conducting quality research. With so much information available, in different formats, from so many different sources, each piece of information that you select must be carefully reviewed to ensure the quality, authority, perspective, and balance that best support your research.

5.1. Learning Objectives

By the end of this unit you should be able to:

- Describe several criteria for judging quality of information in all formats.
- Describe the importance of evaluating information sources quality.
- Determine when information Synthesis is needed and how to execute it.

5.2. General Evaluation Criteria

Academic information suitable for academic research comes in many formats, but there are some common elements in deciding whether any information is credible. Consider the following when deciding whether to use or believe the information you find. Please note that these are the general evaluation criteria for all information formats. Format specific evaluation criteria are covered later.

5.2.1. Authority

It is important to know who the author of a book, article or website is. In varying situations, the author could be an individual, a group or an organisation. Information sources with anonymous authors carry less weight than those whose authors are known. Knowledge of the author of an information source is also useful in determining the authenticity of the information source. The author’s biography on the information source e.g. in the preface or, about the author section is important. A website might have a section entitled, about us or,
Information Literacy Skills Module

about this site; such information is key to determining the authoritativeness of an information source. Be wary of information sources without authors ascribed to them.

The following questions should be asked when considering authority:

<table>
<thead>
<tr>
<th>Ask the Questions</th>
<th>Find Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is the author?</td>
<td>Can you identify an author for the work?</td>
</tr>
<tr>
<td></td>
<td>Most common places to find authors' names listed:</td>
</tr>
<tr>
<td></td>
<td>Title page (book or report)</td>
</tr>
<tr>
<td></td>
<td>Title information at top of first page (articles, book chapters)</td>
</tr>
<tr>
<td></td>
<td>End of the article (encyclopaedias)</td>
</tr>
<tr>
<td></td>
<td>Top or bottom of page (web pages)</td>
</tr>
<tr>
<td>What are the author’s credentials?</td>
<td>Examine the item for information about the author</td>
</tr>
<tr>
<td>Relevant university degree</td>
<td>Look in biographical sources</td>
</tr>
<tr>
<td>Institutional affiliation (where does he or she work?)</td>
<td>Look in directories, e.g.</td>
</tr>
<tr>
<td>Relevant field or employment experience</td>
<td>Who's Who</td>
</tr>
<tr>
<td>Past writings</td>
<td>National Faculty Directory</td>
</tr>
<tr>
<td></td>
<td>Search the web for the author’s home page</td>
</tr>
<tr>
<td></td>
<td>Search article indexes and the online catalogue for other works by the author</td>
</tr>
<tr>
<td>What is the author’s reputation among his/her peers?</td>
<td>Look in annual reviews</td>
</tr>
<tr>
<td>Cited in articles, books or bibliographies on the topic</td>
<td>Use citation indexes to find articles citing your author</td>
</tr>
<tr>
<td>Mentioned in your textbook or by your professor</td>
<td>Web of Science (Social Science Citation Index and Science Citation Index)</td>
</tr>
<tr>
<td></td>
<td>Arts &amp; Humanities Search</td>
</tr>
<tr>
<td>Who is the publisher?</td>
<td>Look in directories, e.g.</td>
</tr>
<tr>
<td>Commercial, trade, institutional, other</td>
<td>Writer’s Market</td>
</tr>
<tr>
<td>Known for quality and/or scholarly publications</td>
<td>Literary Marketplace</td>
</tr>
<tr>
<td>Basic values or goals</td>
<td>Directory of Corporate Affiliations</td>
</tr>
<tr>
<td>Specialisation</td>
<td>Search the web for the publisher’s web site</td>
</tr>
<tr>
<td>Editorial board</td>
<td>Look for editorial guidelines or author instructions in journals or on the publisher’s web site</td>
</tr>
<tr>
<td>Blind review process</td>
<td>Is the author associated with a</td>
</tr>
<tr>
<td>Search the web for the organization’s web site</td>
<td></td>
</tr>
</tbody>
</table>
5.2.2. Bias / Objectivity

Bias is “a predisposition or prejudice” (Pearsall & Trumble 1995). Assess whether the information source is a marketing tool, has some political motives behind it or is merely advocating for a cause. Therefore, when evaluating the bias of an information source, it is ideal to consider why the information was produced (whether for objective reasons or not), the depth and breadth of the information (some information is just sketchy), and the language used (some information shows lack of in-depth knowledge about the subject discipline being dealt with). Verify whether the information is factual, an opinion or mere propaganda. Some of the questions that can be asked include:

**Ask the Questions** | **Find Answers**
--- | ---
Does the author state the goals for this publication? | Read the foreword, preface, abstract and/or introduction
- Inform, explain, educate
- Advocate
- Persuade or dissuade
- Sell a product or service
- Serve as a soapbox

Does the author exhibit a particular bias? | Read the abstract and/or introduction
- Commitment to a point of view
- Acknowledgement of bias
- Presentation of facts and arguments for both sides of a controversial issue
- Language free of emotion-arousing words and bias

Is the viewpoint of the author’s affiliation reflected in the message or | Search the web for the organization’s web site
- Look in directories, e.g.

reputable institution or organisation?
- Organizational mission
- Basic values or goals
- National or international Membership

Look in directories, e.g.
- The Encyclopaedia of Associations
- Research Centres Directory
5.2.3. Reliability

Reliability is directly related to Authority, but does address different issues. Reliability in this context relates to the quality, accuracy and treatment of the information. The best way to ascertain whether an information source is reliable is by checking its editorial control. If an information source goes through editorial control or peer-reviewing then its reliability is higher. Information sources that do not go through editorial control are prone to have a lot of errors such as grammar and spellings. It is, therefore, advisable to look for information that has gone through some editorial control. In this case, articles published in peer-reviewed journals would be ideal. Publishers such as Cambridge, Oxford, Taylor and Francis, Elsevier and Blackwells have their journal articles peer-reviewed by subject experts. Refereed journals have higher levels of accuracy and reliability since they seek to produce authoritative information. Questions that can be asked to determine reliability are;

<table>
<thead>
<tr>
<th>Ask the Questions</th>
<th>Find Answers</th>
</tr>
</thead>
</table>
| Is the information well-organized? | Look at the headings to indicate structure  
Logical structure  
Main points clearly presented  
Main ideas unified by overarching idea  
Text flows well (not choppy or stilted)  |
| Look for agreement among reviews  
|  |
| o Magazines for Libraries  
|  |  
| o Ulrich’s International Periodicals Directory  
|  |  
| o Book reviews  
|  |  
| o Internet Scout Report  |

| Does the information appear to be valid and well-researched? | Verify facts and statistics with a reliable source  
Reasonable assumptions and conclusions  
Arguments and conclusions supported by evidence  
Opposing points of view addressed  
Opinions not disguised as facts  
Authoritative sources cited |
|--------------------------------------------------------------|---------------------------------------------------------------|
| Verify facts and statistics with a reliable source  
Reasonable assumptions and conclusions  
Arguments and conclusions supported by evidence  
Opposing points of view addressed  
Opinions not disguised as facts  
Authoritative sources cited |

<table>
<thead>
<tr>
<th>content?</th>
</tr>
</thead>
</table>
| Organization’s (e.g., government, university, business, association) point of view on the topic being discussed  
Organization’s mission and activities  
Advertising is clearly labelled  
Benefits to organization |
| o The Encyclopaedia of Associations  
|  
| o Research Centres Directory |
5.2.4. Currency

Depending on your research requirements, some researches require up to date information. Furthermore, some information is useful regardless of publication date, for example information on a historic event. The date of publication can be verified on the preliminary pages of printed sources such as books and journals. It is, however, different with online information sources such as websites. Websites have got a section (usually the bottom of the web page) indicating when the website or specific web page was last updated. With websites, you have to be careful with the “last updated” note because in some circumstances the owners of the website simply change the update this section alone without updating the rest of the content. Ask yourself the following questions;

- Verify facts and statistics with a reliable source
- Examine cited sources for authority and objectivity
## Ask the Questions | Find Answers

| When was it published? | Look for a publication or copyright date on the
| | o Title page (books, journals)
| | o Reverse of the title page (books)
| | o Cover (journals, magazines, newspapers)
| | o Table of contents (journals, magazines)
| | o Bottom of the page (web sites)
| | Dates on web pages may indicate
| | o When the page was created
| | o When the page was published on the web
| | o When the page was last revised

| Is your topic one that requires current information? | Topic areas requiring the most up-to-date information may include
| | o Science
| | o Medicine
| | o Current events

| Has this source been revised, updated, or expanded in a subsequent edition? | Search catalogues and other databases for more recent editions
| | o Worldcat
| | o Books In Print
| | o Amazon.com

### 5.2.5. Coverage / Scope

This refers to the extent to which a source explores a topic. Consider time periods, geography or jurisdiction and coverage of related or narrower topics. Ask yourself;

<table>
<thead>
<tr>
<th>Ask the Questions</th>
<th>Find Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the work update other sources?</td>
<td>Compare publication dates and content to other sources you have found</td>
</tr>
<tr>
<td>Does it substantiate other resources you have read, or add new information?</td>
<td>You should seek out multiple points of view and include a diversity of sources and ideas.</td>
</tr>
<tr>
<td>Have you found enough information</td>
<td>Look for gaps in your arguments and evidence</td>
</tr>
</tbody>
</table>
Information Literacy Skills Module

| to support your arguments? | Facts  
|                           | Statistics  
|                           | Evidence  
| Is the information complete, or is it a summary of other work? | Check whether the source is a review, abstract, or an edited or shorter version of the main edition.  
| What level is the information? Is it advanced, technical, basic information? | Verify on the preface or address to the audience whether it is for primary, secondary or tertiary level.  

5.2.6. Relevancy

After all is said and done, the biggest question to ask yourself is does the information source answer your questions? Is the work applicable to your study? Does it "fill your information need?" While the other criteria are based on facts, things you can see or find out about your information source, this one is a total judgment call. You must know what information you need, what type of information source you need it to come from, and what you will be using that information for (a final term paper, a short composition, a project, a dissertation, your personal knowledge or information, etc.). You must make the judgment as to the relevancy of your information source. Is the information source relevant to your information need? It is entirely possible, and highly likely that you will find an item which is very reliable, from a very authoritative source, very current, and very complete... but not relevant to your topic.

The first place to look for answers is the table of contents. A book can have a great title but then can be full of tangential ideas or take an approach that simply may not add to your study. The next place to check out is the index. The index is a wonderful resource for researchers. You can use it to quickly jump to particular passages if your topic is well defined. More often, you'll scan the index to get a feel for the authority and scope of the text. Often you can learn most of what a book can tell you by reading the preface and the introduction and scanning the table of contents and index.

The following issues can be considered when determining relevancy;

<table>
<thead>
<tr>
<th>Ask the Questions</th>
<th>Find Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the work address your research question or meet the requirements of your assignment?</td>
<td>Review your research question and/or assignment</td>
</tr>
<tr>
<td>Is the content appropriate for your research topic or assignment?</td>
<td>Check the table of contents or scan the subheadings</td>
</tr>
<tr>
<td>Scholarly vs. popular</td>
<td>Read the preface, abstract, introduction, and/or conclusion</td>
</tr>
<tr>
<td>Fact vs. opinion</td>
<td></td>
</tr>
</tbody>
</table>
5.2.7. Evaluating the text

You evaluate a text to determine the objectivity of the author and the credibility of the work. Do not assume that your sole motive or goal is to eliminate sources. While this may be a consequence of your analysis, your goal should be to understand the context of the work so you can assess how it can inform your argument. To do this, you must analyze the text according to three criteria: the author, the publisher, and the date of publication;

5.2.8. Publisher

The questions you will ask about the publisher are similar to those asked about the author. Look in the first few pages of the book for the copyright and publisher information. Did a university press—for example, UZ Press, AU Press—publish the text? Did a popular press—publish it? You can be relatively sure that if a university press published the book, it has been held to a high academic standard. Popular presses differ in their standards. You may have to look at other aspects of the book (see below for tips on identifying tone and audience) or look at other books produced by the same publisher to judge the credibility of the text. Remember, you are not looking for ways to exclude works. Rather, you are trying to understand the context in which the book was written so you can better analyse its content.

5.2.9. Argument

Analysing the argument gets to the heart of a critical approach to your sources. Analysing the author, publisher, and age of the text provides a good place to start your analysis. While this

<table>
<thead>
<tr>
<th>Format/medium (e.g., book, journal, government report, web site, etc.)</th>
<th>Look for footnotes or endnotes and/or a bibliography</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject coverage</td>
<td>Look for reviews</td>
</tr>
<tr>
<td>Language</td>
<td>o Magazines for Libraries</td>
</tr>
<tr>
<td>Time period</td>
<td>o Ulrich’s International Periodicals Directory</td>
</tr>
<tr>
<td>Geographical area</td>
<td>o Book reviews</td>
</tr>
<tr>
<td>Audience</td>
<td>o Internet Scout Report</td>
</tr>
</tbody>
</table>

Primary (e.g., raw data, diaries, literature, photographs, first-hand accounts of an event, research reports, etc.) vs. secondary (information that has been analyzed and interpreted, e.g., literary criticism, most books, review of an art show or play, etc.) vs. tertiary (sources that compile, analyze and digest secondary sources, e.g., encyclopaedias, CQ Researcher)
task may seem daunting at first, here are some tips and techniques you can learn to make it a lot easier.

- Is the information supported by evidence? Take a good look at the footnotes or endnotes. What kinds of sources did the author use? Does the bibliography mention the important books in the field?
- What is the major claim or thesis of the book or article? Is it clear what the author is trying to prove?
- What are the primary assumptions on which the author bases the argument's main claim? Do you agree with those assumptions? Is the author taking too much liberty in making those assumptions?
- Check out the Book Review Index in the Reference section of the library. Read what other scholars have written about this book. Are the reviews generally positive? Do they consider the book useful or important to the field? This is not considered cheating. On the contrary, it will enable you to read the book with your eyes open, so to speak.

5.2.10. Audience
An analysis of the audience can tell you a lot about how much authority a book or article can claim. Most of what you uncovered in your analysis of the text will inform your judgment of the intended audience. You can find out more by looking at how the book is written and what type of format it is written in. Is the work full of technical terms or graphs? Then the audience may be academic. Is the language very simple with lots of pictures? Then the audience may be a younger crowd, or the book may be intended for light reading. If you are reading a newspaper or magazine, look at the advertisements. Who does the publisher hope will read the source? An advertisement for Lexus automobiles or Johnny Walker Red scotch in "Newsweek" may indicate a wealthy, educated (and possibly male) audience. An advertisement in "People" for Tommy Hilfiger or Pepsi may indicate a different audience.

5.2.11. Tone
The tone of a book is how the author represents himself or herself through language. Strong and impassioned language may indicate to you that the author is too emotionally connected to the work to provide an objective analysis. Most academic authors try to appear impartial in their writing by always writing in the third person and staying away from loaded adjectives. Here are some questions you can ask about the author's tone:

- Does the author's language seem impartial to you? Are wild claims made? Is a lot of emotional language used?
- Does the author remain focused on the argument? Does he or she jump from point to point without completing any thoughts?
- Does the author seem objective? Does the information appear to be propaganda to you? Is a specific agenda put forth through the selection of data or the manipulation of evidence? Remember, finding a bias does not necessarily mean you should discard the book. Take it in stride and use it accordingly.
5.2.12. Following the trail

It may happen that you come up with a topic and go to the library to find sources. You sit down with ten books that you gleaned from a keyword search on the library’s online catalogue. You put all ten books through the critical analysis steps outlined above, and only one fits all your criteria. What do you do now? Go back to the library catalogue? Browse the shelves near where you found the first ten? Those methods may work, but a quicker way is to follow the trail of sources in the one book you have decided to use. Look at the footnotes and bibliography. Note titles that the author relies on or refers to as pillars of the discipline. Then look up those books or articles in the library catalogue and begin the critical analysis process all over again. This time, however, you know what one author thinks about the book, so it already has achieved a level of authority or importance. Following the trail from one book or article to others can lead to an understanding of the entire structure of the literature on a particular topic.

5.3. Information use and Synthesis

5.3.1. Introduction

Information synthesis is one of the most valuable contributions a researcher / scientist can make. Information syntheses involve creating order out of chaos. It involves organising information from multiple sources and putting it all together. Writing a synthesis essay requires the ability to digest information and present it in an organized fashion. While this skill is developed in high school and college classes, it translates to the business and advertising world as well.
A synthesis is a piece of writing that combines information from two or more sources. It follows that your ability to write syntheses depends on your ability to infer relationships among sources - essays, articles, fiction, and also non-written sources, such as lectures, interviews, observations (Michigan State University, 2017). If a writer is explaining a concept or event, research from different sources can be synthesized to offer a well-rounded explanation of it. If a writer is arguing a point, her point can be emphasized by synthesizing several pieces of research that back her thesis.

This process is nothing new for you, since you infer relationships all the time - say, between something you've read in the newspaper and something you've seen for yourself, or between the teaching styles of your favourite and least favourite instructors. In fact, if you've written research papers, you've already written syntheses. In an academic synthesis, you make explicit the relationships that you have inferred among separate sources.

Clearly, before you're in a position to draw relationships between two or more sources, you must understand what those sources say; in other words, you must be able to summarize these sources. It will frequently be helpful for your readers if you provide at least partial summaries of sources in your synthesis essays. At the same time, you must go beyond summary to make judgments - judgments based, of course, on your critical reading of your sources. You should already have drawn some conclusions about the quality and validity of these sources; and you should know how much you agree or disagree with the points made in your sources and the reasons for your agreement or disagreement.

Further, you must go beyond the critique of individual sources to determine the relationship among them. Is the information in source B, for example, an extended illustration of the generalizations in source A? Would it be useful to compare and contrast source C with source B? Having read and considered sources A, B, and C, can you infer something else - D (not a source, but your own idea)?

Because a synthesis is based on two or more sources, you will need to be selective when choosing information from each. It would be neither possible nor desirable, for instance, to discuss in a ten-page paper every point that the authors of two books make about their subject. What you as a writer must do is select the ideas and information from each source that best allow you to achieve your purpose.

The following questions are worth asking when doing an information synthesis:

- Engage (read, view, listen) the information source.
- What information does this source provide?
- Extract the information from a source.
- What specific information is worth applying to the task?
- Select the information to answer - What is important?
- Extract information using notes, copies, citations, outline major points.
- Synthesis - putting it all together.
- Organise information from multiple sources.
- How does the information from all sources fit together?
Present information - *how is the information best presented?*

The proliferation of publications makes formal information syntheses not only necessary but difficult to accomplish. Put simply, so much information is being generated and disseminated that the information we need is being obfuscated in the process.

As such, an information synthesis involves four steps:

- **Topic definition** (*to determine the information that is relevant*).
- **Systematic information search** (*to find relevant information*).
- **Validity assessment** (*to identify valid information from among that which is relevant*), and;
- **Presentation of relevant, valid information in a manner useful to the intended audience.** *Valid Information* refers to research findings that are substantiated by the reported methods used to produce them.

### 5.3.2. Understand the concept of a synthesis essay

The purpose of a synthesis essay is to make insightful connections between parts of a work, or multiple works, with the goal of ultimately presenting and supporting a claim about a topic. In other words, when you do research on a topic, you will look for connections that you can form into a solid perspective on a topic. The different types of synthesis essays can be categorized as follows:

- **Argument synthesis:** This type of essay has a strong thesis statement that presents the writer’s point of view. It organizes relevant information gathered from research in a logical manner to support the thesis’ point of view. The purpose of an argument synthesis is for you to present your own point of view - supported, of course, by relevant facts, drawn from sources, and presented in a logical manner. The thesis of an argumentative essay is debatable. It makes a proposition about which reasonable people could disagree, and any two writers working with the same source materials could conceive of and support other, opposite theses.

- **Review:** Often written as a preliminary essay to an argument synthesis, a review essay is a discussion of what has been written previously on a topic, with a critical analysis of the sources covered. Its unstated thesis is usually that more research needs to be done in that area or that the topic problem has not been adequately addressed. This type of paper is common in social science classes and in medicine.

- **Explanatory/background synthesis:** This type of essay helps readers understand a topic by categorizing facts and presenting them to further the reader’s understanding. Writers explain when they divide a subject into its component parts and present them to the reader in a clear and orderly fashion. It does not advocate a particular point of view, and if it has a thesis statement, the thesis is a weak one. Explanations may entail descriptions that re-create in words some object, place, event, sequence of events, or state of affairs. The purpose in writing an explanatory essay is not to argue a particular point, but rather
to present the facts in a reasonably objective manner. The explanatory synthesis does not go much beyond what is obvious from a careful reading of the sources. Whilst in most cases you will not be required to write explanatory synthesis essays, at times your argumentative synthesis essays will include sections that are explanatory in nature.

5.3.3. Writing a literature review and using a synthesis matrix

When students are faced with information sources, this sounds like a lot of information, and they always ask themselves: how can I keep it organized? Because a literature review is NOT a summary of these different sources, it can be very difficult to keep your research organized (North Carolina State University, 2006). It is especially difficult to organize the information in a way that makes the writing process simpler. One way that seems particularly helpful in organizing literature reviews is the synthesis matrix.

The synthesis matrix is a chart that allows a researcher to sort and categorize the different arguments presented on an issue. Across the top of the chart are the spaces to record sources, and along the side of the chart are the spaces to record the main points of argument on the topic at hand. As you examine your first source, you will work vertically in the column belonging to that source, recording as much information as possible about each significant idea presented in the work. Follow a similar pattern for your following sources. As you find information that relates to your already identified main points, put it in the pertaining row. In your new sources, you will also probably find new main ideas that you need to add to your list at the left. You now have a completed matrix!

As you write your review, you will work horizontally in the row belonging to each point discussed. As you combine the information presented in each row, you will begin to see each section of your paper taking shape. Remember, some of the sources may not cover all of the main ideas listed on the left, but that can be useful also. The gaps on your chart could provide clues about the gaps in the current state of knowledge on your topic.

5.3.3.1. Creating Your Synthesis Matrix

It is probably best to begin your chart by labelling the columns both horizontally and vertically. The sample chart below illustrates how to do this:

<table>
<thead>
<tr>
<th>Topic: ___________________________</th>
<th>Source #1</th>
<th>Source #2</th>
<th>Source #3</th>
<th>Source #4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Idea A</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Main Idea B</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Label the columns across the top of your chart with the author’s last name or with a few keywords from the title of the work. Then label the sides of the chart with the main ideas that your sources discuss about your topic. As you read each source, make notes in the appropriate column about the information discussed in the work, as shown in the following chart:

**Topic: Women in World War II (WWII)**

<table>
<thead>
<tr>
<th>Alteration of women’s roles because of WWII</th>
<th>Cornelsen</th>
<th>Stewart</th>
<th>Bruley</th>
<th>Scott</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Women accredited the WASP program for opening new doors, challenging stereotypes, and proving that women were as capable as men (p. 113)</td>
<td>- Women given equal opportunities (p. 223)</td>
<td>- Needs of the war were so great that women’s traditional social roles were ignored (p. 30)</td>
<td>- Women born in the 1920’s found new doors open to them where they once would have encountered brick walls (p. 526)</td>
<td>- “The WASP were routinely assigned inferior planes that were later found to have been improperly maintained” (p. 114)</td>
</tr>
<tr>
<td>- Women could compete with men as equals in the sky because of their exemplary performance (p. 116)</td>
<td>- WAAC (Women’s Army Auxiliary Corp) was 1st chance for women to serve in army, given full army status in 1943 as WAC (p. 28)</td>
<td>- Military women paid well for the time period and given benefits if they became pregnant (p. 32)</td>
<td>- Even women not directly involved in the war were changing mentally by being challenged to expand their horizons because of the changing world around them (p. 562)</td>
<td>- Women given unskilled labour positions by government because only seen as temporary workers, therefore no reason to train them (p. 221-2)</td>
</tr>
<tr>
<td>- WASP created opportunities for women that had never previously existed (p. 112)</td>
<td>- Needs of the war were so great that women’s traditional social roles were ignored (p. 30)</td>
<td>- Seized these new opportunities to bring about change (p. 230)</td>
<td>- Women given less significant work and viewed as less</td>
<td>- Women in the military given extensive physical and mental tests, but still discriminated against, ridiculed, and considered inferior to men (p. 29)</td>
</tr>
</tbody>
</table>

**Hardships and oppositions women faced**

| | Cornelsen | Stewart | Bruley | Scott |
| | - “The WASP were routinely assigned inferior planes that were later found to have been improperly maintained” (p. 114) | - Women in the military given extensive physical and mental tests, but still discriminated against, ridiculed, and considered inferior to men (p. 29) | - Women given equal opportunities (p. 223) | - Women born in the 1920’s found new doors open to them where they once would have encountered brick walls (p. 526) |
| | - discrimination against WASP at every level of military service, | | - Needs of the war were so great that women’s traditional social roles were ignored (p. 30) | - Even women not directly involved in the war were changing mentally by being challenged to expand their horizons because of the changing world around them (p. 562) |
women were only paid 2/3 of what men were for doing identical tasks (p. 114)

intelligent and physically able (p. 224)

**Opposition:**

WWII did NOT effect women

- Women put in untraditional roles during / because of the war, but back to previous subservient roles after the war (p. 35)

- Women were not affected because they still remained in subordinate positions after the war (p. 217)

After your chart is complete, notice patterns of information. You may find that your sources, at times, discuss very similar material, or that they sometimes deal with completely different aspects of your topic. These patterns can be useful in creating a thesis statement that can guide your writing and keep you focused as you begin your draft.

**5.3.3.2. Writing Your Review**

Here is an example from the literature review: *“World War Two and its Effect on Women.”* This excerpt synthesizes information without summarizing.

*While the articles used in this research agree that women made many advances during the Word War II period, it is crucial to realize that not all these changes were welcomed. In most cases women faced discrimination from just about everyone around them. Women in the workplace were often placed in positions of inferiority or treated as being less physically able to do the same work the men did. Many women were often not trained because they were viewed as temporary employees who were only there for the duration of the war (Bruley, 2003, pp.221-222). Women were very rarely given equal pay as men, even though some of them did the same work. Women in the military faced not only mental abuse but also physical harm from their male counterparts. According to Cornelsen (2005), there were many instances where female aviators were injured or killed due to being made to fly ill-maintained aircrafts or aircrafts that had been sabotaged. (p.114)*

The sample above is an excellent example of how to synthesize information adequately. Notice how when transitioning from Bruley to Cornelsen the writer notes not only that the two articles are similar, but also how they are similar. The writer goes into detail about Bruley’s discussion of women in industry facing discrimination while noting that Stewart deals with prejudice in the military. The author also transitions well between the Bruley article and
the Cornelsen article; rather than summarizing, the author draws comparisons between the two articles, giving relevant information and at the same time synthesizing the two works.

Activity 5.1

1. 
UNIT SIX (6)

ECONOMIC, LEGAL, AND SOCIAL ISSUES FOR USE OF INFORMATION

6.0. Introduction
The demand and drive for countries of the developing world to transform into knowledge economies cannot be overemphasised. This has largely been influenced by the obvious desire for an information society in which information is considered an economic resource. Within such a society, it is almost generally agreed and understood that the creation, distribution, diffusion, use and manipulation of information is a major economic, political and cultural activity. Also central to an information society is the role of information and communications technologies (ICTs) in driving the production and economic agenda of such a society. From these perspectives, emerge the need to consider ethical creation, distribution, diffusion, use and manipulation of information (Hikwa, 2010).

Information Ethics in the context of this module is understood to be that field which investigates ethical issues emerging from the application of ICTs in information delivery. Such issues may include moral issues surrounding, information life-cycle, ownership of information, legal issues, access to information, the digital divide, intellectual property rights, etc. The whole idea of thinking ethically around information is influenced by the desire to develop and sustain an information society. The emergence of new ICTs has affected fundamental rights related to copyright protection, intellectual freedom, accountability and security.

This unit provides the economic, legal and social issues relating to the use of information. Issues such as fair use, copyright, and plagiarism of information will be discussed.

6.1. Learning Objectives

By the end of this unit you should be able to:

- Understand and appreciate ethical and legal issues in information retrieval, dissemination and use.
- Understand and appreciate codes and policies for research ethics.
- Understand authorship, intellectual property, copyright and fair use of information.
- Understand issues surrounding plagiarism.
- Appreciate information referencing techniques and citation styles.
6.2. Ethics in research and why is it important
When most people think of ethics, they think of rules for distinguishing between right and wrong, such as the Golden Rule ("Do unto others as you would have them do unto you"), a code of professional conduct like the Hippocratic Oath ("First of all, do no harm"), a religious creed like the Ten Commandments ("Thou Shall not kill..."), or a wise aphorisms like the sayings of Confucius. This is the most common way of defining "ethics": norms for conduct that distinguish between acceptable and unacceptable behaviour.

6.3. Codes and Policies for Research Ethics
The following is a rough and general summary of some ethical principles that various codes address:* Adapted from Shamoo A and Resnik D ( 2009)

6.3.1. Honesty
Strive for honesty in all scientific communications. Honestly report data, results, methods and procedures, and publication status. Do not fabricate, falsify, or misrepresent data. Do not deceive colleagues, granting agencies, or the public.

6.3.2. Objectivity
Strive to avoid bias in experimental design, data analysis, data interpretation, peer review, personnel decisions, grant writing, expert testimony, and other aspects of research where objectivity is expected or required. Avoid or minimize bias or self-deception. Disclose personal or financial interests that may affect research.

6.3.3. Integrity
Keep your promises and agreements; act with sincerity; strive for consistency of thought and action.

6.3.4. Carefulness
Avoid careless errors and negligence; carefully and critically examine your own work and the work of your peers. Keep good records of research activities, such as data collection, research design, and correspondence with agencies or journals.

6.3.5. Openness
Share data, results, ideas, tools, resources. Be open to criticism and new ideas.

6.3.6. Respect for Intellectual Property
Honour patents, copyrights, and other forms of intellectual property. Do not use unpublished data, methods, or results without permission. Give credit where credit is due. Give proper acknowledgement or credit for all contributions to research. Never plagiarize.

6.3.7. Confidentiality
Protect confidential communications, such as papers or grants submitted for publication, personnel records, trade or military secrets, and patient records.
6.3.8. Responsible Publication
Publish in order to advance research and scholarship, not to advance just your own career. Avoid wasteful and duplicative publication.

6.3.9. Responsible Mentoring
Help to educate, mentor, and advise students. Promote their welfare and allow them to make their own decisions.

6.3.10. Respect for colleagues
Respect your colleagues and treat them fairly.

6.3.11. Social Responsibility
Strive to promote social good and prevent or mitigate social harms through research, public education, and advocacy.

6.3.12. Non-Discrimination
Avoid discrimination against colleagues or students on the basis of sex, race, ethnicity, or other factors that are not related to their scientific competence and integrity.

6.3.13. Competence
Maintain and improve your own professional competence and expertise through lifelong education and learning; take steps to promote competence in science as a whole.

6.3.14. Legality
Know and obey relevant laws and institutional and governmental policies.

6.3.15. Animal Care
Show proper respect and care for animals when using them in research. Do not conduct unnecessary or poorly designed animal experiments.

6.3.16. Human Subjects Protection
When conducting research on human subjects minimize harms and risks and maximize benefits; respect human dignity, privacy, and autonomy; take special precautions with vulnerable populations; and strive to distribute the benefits and burdens of research fairly.

6.4. Copyright and Fair Use at Great Zimbabwe University
The GZU Library addresses copyright and intellectual property issues because of its role in teaching and promoting information literacy. Libraries concerning the effective use of information states that “an information literate individual is able to ... understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally” (ACRL, 2010:1).
6.4.1. What is Copyright?
Copyright is a legal device that provides the creator of a work of art or literature, or a work that conveys information or ideas, the right to control how the work is used (Fishman, 2008:6). It is a right granted for the protection of literary, dramatic, musical and artistic works and other works resulting from the author’s intellectual creation. The intent of copyright is to advance the progress of knowledge by giving an author of a work an economic incentive to create new works (Loren, 2000:6).

6.4.1.1. What can be copyrighted?
Copyright, just like other fields of Intellectual Property, is there to protect works of human intellect. Copyright is a legal term describing rights given to creators for their literary and artistic works. Tangible, original expressions can be copyrighted. This means, for example, that a verbal presentation that is not recorded or written down cannot be copyrighted. However, anything that is tangible can be copyrighted. There are three fundamental requirements for something to be copyrighted, under the Berne Convention of 1971:

6.4.1.2. What can be copyrighted?

NB: Refer to Copyright Act of Zimbabwe for more information.

- **Works in the public domain:**
  - Ideas are in the public domain.
  - Facts are in the public domain.
  - Words, names, slogans, or other short phrases also cannot be copyrighted. However, slogans, for example, can be protected by trademark law.
  - Blank forms.

- **Government works, which include:**
  - Judicial opinions.
  - Public ordinances.
  - Administrative rulings.
  - Works created by federal government employees as part of their official responsibility.
  - Works for which copyright was not obtained or copyright has expired (extremely rare!)

6.4.1.3. What Does Copyright Protect?
Copyright provides authors fairly substantial control over their work. The three basic protections (*Moral and Economic Rights*) are:

- The right to make copies of the work.
The right to sell or otherwise distribute copies of the work.
The right to prepare new works based on the protected work.

6.4.1.4. What is Fair Use?
Fair use is the most significant limitation on the copyright holder’s exclusive rights (United States Copyright Office, 2010, para. 1). There are no set guidelines that are universally accepted. Instead, the individual who wants to use a copyrighted work must weigh four factors:

The purpose and character of the use:
- Is the new work merely a copy of the original? If it is simply a copy, it is not as likely to be considered fair use.
- Does the new work offer something above and beyond the original? Does it transform the original work in some way? If the work is altered significantly, used for another purpose, appeals to a different audience, it more likely to be considered fair use (NOLO, 2010, para. 6).
- Is the use of the copyrighted work for nonprofit or educational purposes? The use of copyrighted works for nonprofit or educational purposes is more likely to be considered fair use (NOLO, 2010, para. 6).

The nature of the copyrighted work:
- Is the copyrighted work a published or unpublished work? Unpublished works are less likely to be considered fair use.
- Is the copyrighted work out of print? If it is, it is more likely to be considered fair use.
- Is the work factual or artistic? The more a work tends toward artistic expression, the less likely it will be considered fair use (NOLO, 2010, para. 9).

6.4.1.5. In General, What Counts as Fair Use?
Keeping in mind the rules for instructors listed above, and that the source(s) of all resources must be cited in order to avoid plagiarism, general examples of limited portions of published resources that might be used in the classroom under fair use for a limited period of time, as discussed by the Zimbabwe Copyright Act include:
- An article from a periodical or newspaper.
- A short story, essay, or poem. One work is the norm whether it comes from an individual work or an anthology.
- A chart, graph, diagram, drawing, cartoon or picture from a book, periodical, or newspaper.

Poetry: copies of a poem of 250 words or less that exists on two pages or less or 250 words from a longer poem.
Prose: copies of an article, story or essay that are 2,500 words or less or excerpts up to 1,000 words or 10 percent of the total work, whichever is less.

Illustrations: copies of a chart, graph, diagram, drawing, cartoon, or picture contained in a book or periodical issue.

6.4.1.6. What Should Be Avoided?
- Making multiple copies of different works that could substitute for the purchase of books, publisher’s reprints, or periodicals.
- Copying and using the same work from semester to semester.
- Copying and using the same material for several different courses at the same or different institutions.

6.5. Plagiarism
Plagiarism is presenting another person’s words or ideas as your own. It is the unacknowledged borrowing of ideas or material from someone else's work. In academic writing, any time you use a work’s information or ideas, credit must be given to your source. The only exception to this rule is that commonly known facts do not require attribution. Plagiarism includes not only the presentation of other's original ideas as your own, but the act of weakly paraphrasing another’s writing style and passing it off as your own prose.

Plagiarism is a serious instance of misconduct. Several professional careers have been ruined by the discovery of an act of plagiarism. It is considered an academic offense and can be considered grounds for failure in a course or expulsion from the programme. As a general rule and whenever in doubt, it is always better to include a citation rather than risk the appearance of plagiarism. As such, cite all references. This applies to all material including images, sounds or videos.

6.5.1. Forms of Plagiarism by Students
Students plagiarise in four main ways (Wilhoit, 1994; Brandt, 2002; Howard, 2002).

- Stealing material from another source and passing it off as their own, e.g. buying a paper from a research service, essay bank or term paper mill (either pre-written or specially written),
  - Copying a whole paper from a source text without proper acknowledgement,
  - Submitting another student’s work, with or without that student’s knowledge (e.g. by copying a computer disk).
- Submitting a paper written by someone else (e.g. a peer or relative) and passing it off as their own.
6.5.2. What is Referencing?
When you write an assignment at university, you are required to refer to the work of other authors. Each time you do so, it is necessary to identify their work by making reference to it both in the text of your assignment and in a list at the end of your assignment. This practice of acknowledging authors is known as **referencing**.

A reference is required if you:
- Quote (use someone else’s exact words)
- Copy (use figures, tables or structure)
- Paraphrase (convert someone else’s ideas into your own words)
- Summarise (use a brief account of someone else’s ideas).

6.5.2.1. Why should you reference?
References enhance your writing and assist your reader by:
- Showing the breadth of your research;
- Strengthening your academic argument;
- Showing the reader the source of your information;
- Allowing the reader to consult your sources independently; and
- Allowing the reader to verify your data.

6.5.2.2. Which referencing system should you use?
There are a number of different referencing systems used in academic writing, and as such there is no universally adopted referencing system for academic writing. Most scholars and students employ one of the most popular systems currently in use, which include:

- The Harvard System (*often called the ‘Author Date System’*),
- American Psychological Association (APA)
- Modern Language Association of America (MLA)
- Chicago System
- Modern Humanities Research Association (MHRA),

It is important that you use the referencing system required by your lecturer for an assignment and maintain consistency in using that system. Below are examples of 2 types of referencing:
## a. The Harvard referencing style for Hard copy books

<table>
<thead>
<tr>
<th>One author</th>
<th>Examples of how to refer to the resource in-text</th>
<th>Model to follow in the reference list</th>
</tr>
</thead>
<tbody>
<tr>
<td>A recent study (Elder 1995) found that rock samples ... or Elder (1995, p. 14) claims that ‘...’.</td>
<td>Elder, B 1995, <em>The magic of Australia</em>, Beauty Books, Sydney. <strong>Note:</strong> When an author has two or more initials, the entry would look like this: Schwartz, HJ 1985, <em>Interactive writing: composing with a word processor</em>, Holt, Reinhardt and Winston, Austin</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Two authors</th>
<th>Examples of how to refer to the resource in-text</th>
<th>Model to follow in the reference list</th>
</tr>
</thead>
<tbody>
<tr>
<td>A recent study (Yeric &amp; Todd 1989) predicted that ... or Yeric and Todd (1989, p. 17) suggest that ‘...’. <strong>Note:</strong> Use an ampersand (&amp;) within the parenthesis, but use ‘and’ for author prominent referencing.</td>
<td>Yeric, J &amp; Todd, J 1989, <em>Public opinion: the visible politics</em>, Peacock Publishers, Chicago</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Three authors</th>
<th>Examples of how to refer to the resource in-text</th>
<th>Model to follow in the reference list</th>
</tr>
</thead>
<tbody>
<tr>
<td>A recent study highlighted the fact that ... (Yeric, Todd &amp; Muller 1999). or Yeric, Todd and Muller (1999, p. 28) stated that ‘...’. <strong>Note:</strong> Use an ampersand (&amp;) within the parenthesis, but use ‘and’ in author prominent referencing.</td>
<td>Yeric, J, Todd, J &amp; Muller, P 1999, <em>Political Perspectives</em>, Peacock Publishers, Chicago</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Four or more authors</th>
<th>Examples of how to refer to the resource in-text</th>
<th>Model to follow in the reference list</th>
</tr>
</thead>
</table>
b. The Harvard referencing style for electronic books

<table>
<thead>
<tr>
<th>Examples of how to refer to the resource in-text</th>
<th>Model to follow in the reference list</th>
</tr>
</thead>
<tbody>
<tr>
<td>or According to Barro (1997, p. 3), macroeconomics has been defined as ‘...’.</td>
<td></td>
</tr>
</tbody>
</table>

---

### c. The Harvard referencing style for hard copy journal articles

<table>
<thead>
<tr>
<th>Examples of how to refer to the resource in-text</th>
<th>Model to follow in the reference list</th>
</tr>
</thead>
<tbody>
<tr>
<td>or Peterson and Schmidt (1999, p. 90) maintain that ‘...’.</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
</tbody>
</table>
d. The Harvard referencing style for electronic / Online journals

<table>
<thead>
<tr>
<th>Journal article from a database</th>
<th>Examples of how to refer to the resource in-text</th>
<th>Model to follow in the reference list</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendations about the optimal size of a small business Included ... (Mulgan 2000). or Mulgan (2000, p. 10) recommends that ‘...’.</td>
<td>Mulgan, R 2000, ‘Perspectives on “the public interest”’, Canberra Bulletin of Public Administration, no. 95, March, pp. 5-12, (online ProQuest).</td>
<td></td>
</tr>
</tbody>
</table>

e. American Psychological Association (APA) REFERENCING

i. Book by one author: in-text citation

(King, 2000) or

King (2000) compares Frame with "..." (p. 34).
In reference list

ii. Books by two authors - in-text citation
(Treviño & Nelson, 2007) or
Treviño and Nelson (2007) illustrated ...
○ When paraphrasing in text, use and, not & (Publication Manual, p. 175).

In reference list

iii. Books by three authors to five - in-text citation
First in text citation
(Krause, Bochner, & Duchesne, 2006) or
Krause, Bochner, and Duchesne (2006) recommend "..." (p. 32).

In subsequent citations:
According to Krause et al. (2006)
○ Cite all authors the first time, and in subsequent citations include only the first author followed by et al. (short for et alii. - Latin for 'and others'). Do not italicise et al.

In reference list

iv. Electronic Books - in-text citation
(Martin, 2011)

In reference list

v. Print journals - in-text citation
(Sainaghi, 2008) or
Sainaghi (2008) suggests ...

In reference list
A capital letter is used for key words in the journal title. The journal title and volume number are italicised, followed by the issue number in parentheses (not italicised).

If each issue begins with page 1, give the issue number in the parentheses immediately after the volume number.

For researchers, the issue number is not required for journals with continuous pagination.

vi. Journal article-internet only - in-text citation
(Snell & Hodgetts, n.d.) or
Snell and Hodgetts (n.d.) identified "..." (para. 3)
- (n.d.) = no date.
- As there are no page numbers, cite the paragraph number in text.

In reference list
- (n.d.) = no date.

Activity 6.1

1.
Reference

Sample Examination Questions

1. “Lifelong learning and participative citizenship requires one to be information literate”. Explain this statement in light of what you have learnt in Information Literacy Skills? (20 marks)

2. Identify and explain the capabilities of an information literacy individual? (20 marks)

3. “Information literate people are those who have learned how to learn”. Discuss this statement in relation to qualities of an information literate individual? (20 marks)

4. “Library services are developed with the clients in mind”. Analyse this statement in relation to the GZU Library services? (20 marks)

5. Discuss the role of the Library in teaching, learning and research, giving relevant examples from your School. (20 marks)

6. In relation to qualities of an Information Literate Individual, define what is meant by:
   a. Recognise the need for information - timely (as a basis for intelligent decision-making). (4 marks)
   b. Identify potential source (s) of information - from a vast available. (4 marks)
   c. Develop successful and effective search strategies. (4 marks)
   d. Evaluate information obtained meaningfully. (4 marks)
   e. Organise information obtained effectively for practical application, or in critical thinking and problem-solving situations. (4 marks)

7. Electronic Resources are useful sources of research information. Discuss the advantages of using this type of information? (20 marks)

8. “Multimedia information resources create new dimensions to learning experience”. Discuss this statement? (20 marks)

9. “Digital Libraries retain several qualities of traditional Libraries”. Discuss this statement in relation to the GZU Library’s physical collections and Institutional Repository? (20 marks)

10. Answer the following terms:
    a. Define Information Literacy and Lifelong Learning. (3 marks)
    b. Why are information literacy skills important? (3 marks)
    c. Discuss the Qualities of an Information Literate individual. (3 marks)
    d. Distinguish between Information Literacy and Information Technology Literacy. (3 marks)
11. a. Explain why effective searching is important? (5 marks)

b. Briefly explain how the following search tools in a document work?
   - Table of Contents. (5 marks)
   - Subject Index. (5 marks)
   - Author Index. (5 marks)

12. Discuss the following terms used in the evaluation of information sources:
   a. Authority (4 marks)
   b. Relevancy (4 marks)
   c. Objectivity / Bias (4 marks)
   d. Currency (4 marks)
   e. Information Synthesis (4 marks)

13. How do you integrate the skills that comprise information literacy into your courses. Discuss this in relation to what you have learned in ILS? (20 marks)

14. Copyright is a right granted for the protection of an author’s intellectual creation. In what ways has the ILS training helped you to understand this concept? (20 marks)
Further Reading List

**NB:** This reading list is an abridged version. More Information Literacy resources are available on the electronic databases below and on other electronic databases the Library subscribes to.

### A. eBrary eBooks Database

B. EBSCO eBooks Database
17. Michalak, R. (2016). Information literacy in 2015: International graduate business students' perceptions of information literacy skills compared to test-assessed skills.
24. Turbow, D.J. (2016). Norming a VALUE rubric to assess graduate information literacy skills.

C. EMERALD eJournals Database

D. JSTOR eJournals Database