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Assessing the Information Literacy Instructions in the Academic Library in Malaysia: A Case Study at the Perpustakaan Tun Abdul Razak, Universiti Teknologi Mara

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Abstract

This study aims to assess the effectiveness of information literacy instruction held by Perpustakaan Tun Abdul Razak (PTAR) as an academic library. The study employed quantitative data with a study population consisting of undergraduate students. The key findings of the study indicated that information literacy instructions provided by PTAR significantly positively impact information literacy competency among respondents in terms of information articulation and locating physical and online resources. Based on the findings, the ability to develop a thesis statement, identify classification schemes, and use specialized services will need attention to oversee information literacy instruction.

Keywords: information literacy instructions, information literacy competency, academic library

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1.0 Introduction

According to the American Library Association (2023), information literacy is a set of competencies that makes individuals recognize when information is needed and have the knowledge to locate, evaluate, and use the required information effectively. Information literacy classes can be conducted using online information resources and physical hands-on tasks. The professional librarians from Perpustakaan Tun Abdul Razak (PTAR), the academic library for the University of Technology MARA, whose main branch is from Shah Alam, have constructed modules on information literacy classes. In PTAR, information literacy programs are offered to undergraduate and postgraduate students to help them locate information, access library systems, and use reference services. The information literacy classes modules offered are as follows:

- Introduction to the library system
- Introduction to electronic resources
- Online database for literature
- Easy write with Microsoft
- Advancing literature search (Scopus/ Web of Science)
- Library Management System (Endnote, Mendeley)

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- Writing and Publishing
- Open access for scholarly publication
- Google scholar and google drive

In other supporting statements, the library services shall support the online system, which might serve distance learners in conducting research or consulting. According to (Nurul & Asmahani, 2021), PTAR has developed Massive Open Online Courses or PTAR Online Learning, known as MOOCs @ PTAR, for their users. The MOOCs Information Literacy Instructions (ILI) provide users with flexible online training and self-study for the Information Competency Class modules offered by PTAR as follows:

- UiTM Institutional Repository
- Exam Paper System
- Online Database Subscribed by UiTM
- eBook Subscribed by UiTM
- MyLibrary Account
- Web of Science
- Reference Management Software – Endnote
- Reference Management Software – Mendeley (training on in-text citation and references)

The methods in Information Literacy Instructions (ILI) In PTAR, librarians have physical briefings and online platforms such as *Webex Meeting*, *Google Meet*, and *Webinar* (Nurul & Asmahani, 2021). According to Mungwabi (2019), there are positive impacts on information literacy competency based on a survey conducted after the Information Literacy Instructions (ILI). This is also supported by (Rosmah et al., 2010). The study identifies efficient search strategy, online information evaluation, and the ethical use of information, especially while using scholarly resources, as critically needed.

The purposes of this study are as follows:

- To examine the relationship of Information Literacy Instructions (ILI) on information articulation towards information literacy competency.
- To examine the relationship of Information Literacy Instructions (ILI) on locating physical and online resources towards information literacy competency.

2.0 Literature Review

A literature review related to the study's problem was done. The literature review highlights the situation of information literacy instruction in Malaysia and standard indicators used to measure information literacy competency at higher educational levels.

2.1 Higher Education In Malaysia

The Malaysia Education Blueprint (2015-2025) embedded the four Industrial Revolution (4IR), focusing on artificial intelligence (AI), digitization and automation (MOHE, 2018). As stated (MOHE, 2018), the MOHE initiatives include 2u2i, iCGPA, APEL, Malaysia MOOC, CEO@faculty, and my Eportfolio. The current situation in higher education in Malaysia is expected to change the landscape of employment, technological skills and knowledge, and new demands (MOHE, 2018). The mapping of future-proof skills against the World Economic Forums 21st century includes information literacy competencies as the subtopic on digital literacy.

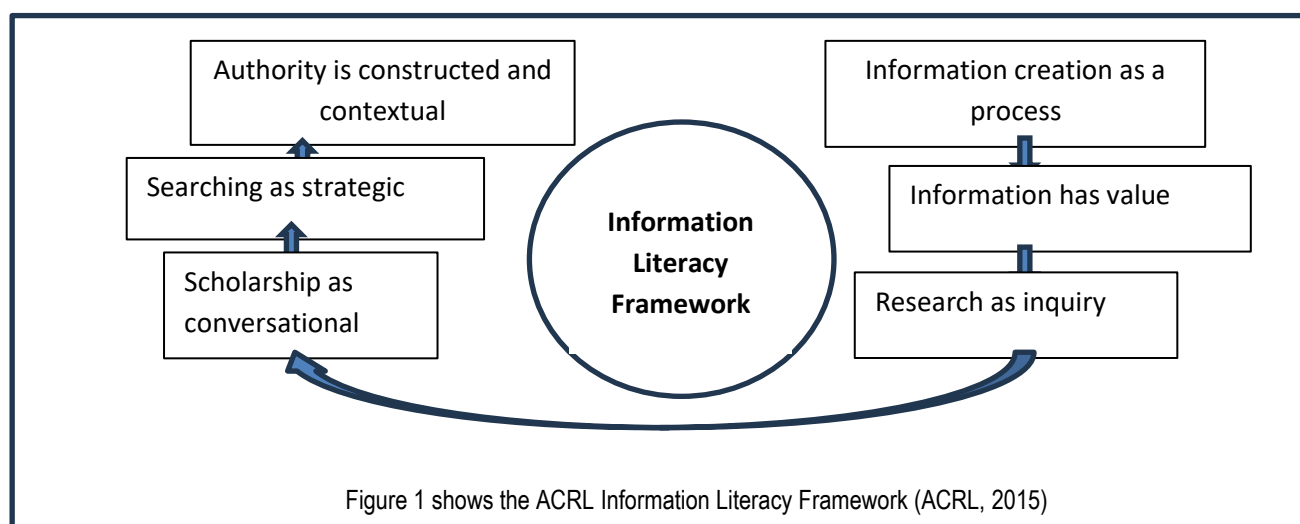
2.2 Information Literacy Instruction Practices In PTAR

In PTAR as the academic library for the University of Technology MARA, the modules have been divided into nine modules: introduction to the library system, electronic resources, online database for literature, easy write with Microsoft Word, advanced literature search (Scopus, Web of Science), Library Management System (Endnote, Mendeley), writing and publishing, Open Access for Scholarly Publication, Google Scholar, and Google Drive (Russli & Narwawi, 2022). According to (Saad and Zainab, 2002), the standard ILI modules observed in five public institutions' academic libraries have shown some similarities: library orientation, OPAC, workshop information skills, integrated programs with the faculty, classes for bibliographic databases and online resources. However, this was the research in early 2000, and new research needs to be proposed to measure the efficiency of new ILI modules and IL competency standards.

2.3 Information Literacy Competency In Higher Education Standard

The academic librarian is responsible for selecting the best resources, modules, and points of access to information and providing instructions needed to seek information (ALA, 2000). The ACRL Information Literacy framework is as shown in Figure 1.

The ACRL IL framework has shown information creation and searching concepts. The evaluation of a variety of information sources needs the capability together with ongoing learning.



2.4 Study on ILI effectiveness in academic library

Research by Mungwabi, "The effectiveness of library information literacy instructions given to undergraduate students at the University of Dar es Salaam", recommends improvements in increasing the number of computers, information literacy curricula, extension of library operating hours, and adequate staff for information literacy instruction. The user satisfaction through the IL competency skills conducted by self-evaluation survey resulted in significant positive impacts.

2.5 ALA IL competency standards for higher education

Five standards and 22 performance indicators are made by the American Library Association (ALA). This has been used as the guideline for faculty and librarians in this study. Even though there are studies related to information literacy instruction in academic libraries, the researcher intended to find out the information literacy competency according to the performance indicator provided by ALA towards self-evaluation among respondents on their capability to pursue information that meets their needs as illustrated in Table 1.

Table 1: Shows ALA Information Literacy Competency for Higher Education, 2000

IV1-Articulating information	<ul style="list-style-type: none"> Standard 1 The information-literate student determines the nature and extent of the information needed. 	<ul style="list-style-type: none"> Performance indicator 1 The information-literate student defines and articulates the need for information.
IV2 - Locating physical and online materials	<ul style="list-style-type: none"> Standard 2 The information-literate student accesses needed information effectively and efficiently. 	<ul style="list-style-type: none"> Performance indicator 3 The information-literate student retrieves information online or in person using various methods. Performance indicator 4 The information-literate student refines the search strategy as necessary.

3.0 Methodology

3.1 Data Collection

This quantitative study collected data from a self-evaluation survey questionnaire. 154 respondents from Puncak Perdana undergraduate students who participated at least once in ILI programs have responded to the survey. The questionnaire comprised closed-ended questions. Section A focused on demographic information, including gender, age, and educational background. Section B is focused on the measurement of ILI on articulating information. Section C is focused on skills in locating physical and online resources. A five-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree) is used to measure the level of information literacy competency as indicated by Table 2.

Table 2: Shows the items used in the self-evaluation survey

CONCEPT	VARIABLES	ITEMS	SOURCES
INFORMATION LITERACY INSTRUCTIONS	Information articulation	<ul style="list-style-type: none"> I can develop a thesis statement and formulate questions based on the information needed. I can explore general information sources to increase familiarity with the topic. 	Information Literacy Competency Standards

		<ul style="list-style-type: none"> • I can define and modify the information needed according to my task • I can identify the key concepts and terms describing the information needed • I know how information is formally and informally produced, organized, and disseminated 	for Higher Education (ALA, 2000), Mungwabi (2019) frameworks
	Locating physical and online resources	<ul style="list-style-type: none"> • I know how to use various search systems to retrieve information in a variety of formats. • I can identify the classification schemes to locate information resources within the physical library. • I know how to use specialized online or in-person services (interlibrary loan, professional associations) • I can assess the quantity, quality, and relevance of the search results together with an alternative information retrieval system. • I know how to record all pertinent citation information for future reference. 	

The items are based on the Mungwabi and ALA indicators of how effective information literacy instructions provided by PTAR have been for respondents searching for the information needed. All the items are the close-ended questions answered by the respondents.

4.0 Findings

4.1 Demographic Profile

Table 3: Part A (Demographic Information)

Demographic information	Frequency	Valid per cent
The educational level of the current program		
Diploma	63	40.9
Bachelor's degree	77	50.0
Master's degree	14	9.1
Total	154	100.0
Age		
Below 21	56	36.4
21-30	88	57.1
31-40	9	5.8
Other	1	0.6
Total	154	100.0
Gender		
Male	113	73.4
Female	41	26.6
Total	154	100.0
Modules and classes participated.		
Introduction to the library system	88	57.1
Introduction to electronic resources	77	50.0
Online database for literature	111	72.1
Easy write with Microsoft	16	10.4
Advancing literature search (Scopus/ Web of Science)	31	20.1
Library Management System (Endnote, Mendeley)	19	12.3
Writing and Publishing	14	9.1
Open access for scholarly publication	27	15.5
Google Scholar and Google Drive	32	20.8
Other	10	6.5
Total	154	100.0
Purposes of learning ILI		
Course assignment	85	55.6
Test and examination	17	11.1
Research	49	32.0
Personal use	1	0.7
Other	1	0.7
TOTAL	154	100.0

All 154 questionnaires have been distributed to undergraduate students of UiTM Puncak Perdana and UiTM Puncak Alam with at least one participation in information literacy instruction provided by PTAR. All of the respondents answered all the demographic profile

questions. The profiles are regarding their educational level in the current program, age, gender, modules in ILI that they participated in, and the purposes for participating in ILI as in Table 3.

Based on the results in Table 4.1, the first profile is about the respondents' education level. The highest number of respondents are Bachelor's Degree students (77 respondents, 50.0 per cent). Next, there are 63 Diploma students (40.9), and 17 respondents (9.1 percent) are Postgraduate students.

The second profile is about respondents' age group. The majority of respondents (88 respondents, 57.1 percent) aged between 21 to 30 years old. It is followed by 56 respondents (36.4 per cent) aged below 21 years old, 9 respondents (5.8 per cent) aged between 31 to 40 years old, and only 1 respondent (0.6 per cent) aged above 40 years old.

The third profile is about respondents' gender. It reveals that the percentage of female respondents is much higher than male respondents, with 113 female respondents (73.4 per cent) and 41 male respondents (26.6 per cent).

The fourth profile is about the modules taken by respondents. Most respondents (111 respondents, 72.1 per cent) have taken the ILI class on online databases for literature, followed by the module Introduction to Library System with 88 respondents (57.1). Next, followed by 77 respondents (50.0) took the modules on Introduction to Electronic Resources. Also, 32 respondents, 20.8 per cent, took part in Google Scholar and Google Drive modules. This is followed by the module of Advancing literature search with 20.1 percent, 31 respondents. Next is the module on Library Management Systems, with 19 respondents or 12.3 percent. This is followed by open access for scholarly publication modules, with 17 respondents (17.5 percent). The last one is 16 respondents; 10.4 percent have taken the module Easy Write with Microsoft.

The last profile is the purpose of learning ILI. The majority (85 respondents, 55.6 percent) agreed with the purpose of the course assignment. 49 respondents followed this, and 32% responded to the research purpose. Next is the test and examination purpose, with 17 respondents, 11.1%. Only one person, with 0.7 percent from the whole respondents, has chosen personal use for joining ILI followed by other reasons.

4.2 Analysis on Information Articulation

The analysis reveals the effects of information articulation ability after attending information literacy instruction by PTAR. It is presented for better insight and deeper understanding about the topic studied and to contribute new facts and knowledge based on real statistical results.

Table 4: Level of Information Literacy Competency for information articulation after ILI

	SD (%)	D (%)	N (%)	A (%)	SA (%)	n	Mean	Level
I can develop a thesis statement and formulate questions based on the information needed	0 (0.0)	1 (0.7)	42 (27.5)	101 (66)	9 (5.9)	153	3.77	Agree
I can explore general information sources to increase familiarity with the topic	0 (0.0)	1 (0.6)	28 (18.2)	111 (72.1)	14 (9.1)	154	3.90	Agree
I can define and modify the information needed according to my task	0 (0.0)	1 (0.6)	28 (18.2)	111 (72.1)	14 (9.1)	154	3.90	Agree
I can identify the key concepts and terms describing the information needed	0 (0.0)	0 (0.0)	26 (17)	114 (74.5)	13 (8.5)	153	3.92	Agree
I know how information is formally and informally produced, organized, and disseminated	0 (0.0)	0 (0.0)	36 (23.4)	101 (65.6)	17 (11)	154	3.88	Agree

Table 4 shows the results on the Information Literacy Competency according to respondents after participation with ILI. The highest mean of 3.92 mean reading resulted from the item identifying the key concepts and terms describing the information needed. The lowest mean, 3.77, is the IL competency in developing a thesis statement and formulating questions based on the information needed. However, two questions were left without answers for items 1 and 5 on Information Literacy Competency in developing thesis statements and formulating questions, including the Information Literacy Competency on critical concepts and terms identification. However, variable 1

shows that the impact of those information literacy instructions on information articulation positively affects the information literacy competency of respondents.

4.3 Analysis of locating physical and online resources

Table 5 shows the respondents' results of Information Literacy Competency after participating in Information Literacy Instruction (ILI) by PTAR. The highest mean reading is 4.00 for the Information Literacy Competency on recording pertinent citation information for future reference. The lowest mean reading was 3.87 on specialized online or in-person services (interlibrary loans, professional associations). Two questions were unanswered by the respondent(s) for item identification of the classification scheme and how to use specialized online or in-person services (interlibrary loan, professional associations). Information literacy instruction positively affects information literacy competency in locating physical and online resources.

Table 5: Level of Information Literacy Competency on locating physical and online resources after ILI

	SD (%)	D (%)	N (%)	A (%)	SA (%)	n	Mean	Level
I know how to use various search systems to retrieve information in a variety of formats	0 (0.0)	2 (1.3)	19 (12.3)	119 (77.3)	14 (9.1)	154	3.94	Agree
I can identify the classification schemes to locate information resources within the physical library	0 (0.0)	3 (2.0)	24 (15.7)	112 (73.2)	13 (8.5)	153	3.91	Agree
I know how to use specialized online or in-person services (interlibrary loan, professional association)	1 (0.7)	3 (2.0)	24 (15.7)	112 (73.2)	13 (8.5)	153	3.87	Agree
I can assess the quantity, quality, and relevance of the search results together with an alternative information retrieval system	0 (0.0)	3 (1.9)	25 (16.2)	105 (68.2)	21 (13.6)	154	3.94	Agree
I know how to record all pertinent citation information for future reference	0 (0.0)	1 (0.6)	20 (13)	110 (71.4)	23 (14.9)	154	4.00	Agree

Note: VD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

5.0 Discussion

The primary purpose of this study is to identify the relationship between the effectiveness of information literacy instruction (ILI) and the ability to articulate information and locate physical and online resources. The effectiveness of information literacy instructions is significantly related to the level of information literacy competency. The result further shows a significant relationship between Information Literacy Instructions (ILI) and information articulation and Information Literacy Competency. This has resulted in the highest information literacy competency for the self-evaluation survey after ILI, which is on the capability to find the key concepts and terms describing the information needed. This has been supported by indicator 1 (ALA, 2000), which states that competency in articulating information is related to the student's capability to define the nature and extent of the information needed. The lowest capability is developing a thesis statement even after the ILI as an alarm for improvement on the modules constructed. The next item, with 117 respondents agreeing that they can identify formal and informal information.

The study has shown that information literacy instruction modules provided by PTAR effectively positively impact the skill to locate physical and online resources. This has been supported by (A., Jessy, K.B., Shivanandan and R., and Mahabaleshwara, 2016), that awareness of the types and how to search for library resources has increased after the IL programs. According to the modules provided by PTAR, the modules related to locating physical and online resources are the introduction to the library system, with 57.1% participation from respondents and the introduction to electronic resources, with 50.0% participation from respondents. 81.8% of the respondents agreed to their improvement in the quantity, quality, and relevancy assessment of the search results after participation in ILI. The highest satisfaction on the ability to record pertinent citation information for future reference is up to 86.3% after ILI. The result showed positive impacts on information literacy competency after the information literacy instruction provided by PTAR.

6.0 Conclusion and Recommendation

The library should develop strategies to assess students' information literacy competency to measure the effectiveness of PTAR's instructions. Conducting more hands-on training will increase assessment frequency. A pre- and post-survey on information literacy competency is recommended. Practical tests are predicted to be more effective than self-evaluation surveys. Academic librarians should

collaborate with faculty to promote new ILI services and modules. Intervention studies should examine the effectiveness of ILI modules. The Ministry of Higher Education and Librarians Association of Malaysia can establish job development milestones and standard modules for information literacy instruction, setting guidelines for all academic libraries in Malaysia.

As for the future study, it is recommended for another researcher to study for hands-on training that is essential for frequency and efficiency. This is supported by (A., Jessy, K.B., Shivanandan and R.; Mahabaleshwara, 2016), that opportunities for hands-on training must be given for effectiveness of ILI programs. Furthermore, further research using the data of practical tests on information literacy competency shall be conducted with the cooperation of academic librarians, lecturers, and faculty to measure the actual skills rather than a self-evaluation survey. It is also essential for future research to include module construction on the multi-disciplinary nature of the courses offered as it can vary for each course with different modules of ILI required.

The study is limited by its focus on undergraduate students from a single institution, which restricts the generalizability of the findings. Additionally, the use of self-assessment surveys may introduce bias and may not accurately reflect actual information literacy skills.

7.0 Paper contribution to the related field

7.1 Literature Contribution

The efficiency is measured by information literacy competency as proof of the effectiveness of the information literacy instruction (ILI) conducted. This study will likely unfold the level of information literacy competency after participation in ILI to indicate its effectiveness. The findings from the study can be used by academic librarians, lecturers, faculties and researchers in the information management industry.

7.2 Practical Contributions

This study's findings are also expected to help PTAR and research institutions recognise the importance of Information Literacy Instructions (ILI). The outcomes will provide beneficial findings and meaning to MARA, the government, policymakers, and academic libraries in developing Information Literacy Instructions (ILI) in Malaysia. While earlier studies (e.g., Saad & Zainab, 2002) identified common information literacy instruction (ILI) modules in academic libraries, these findings are now outdated. Since then, significant changes in digital tools, scholarly communication, and student needs have occurred. Although PTAR has developed updated modules (Russli & Narwawi, 2022), there is a lack of recent empirical research evaluating the effectiveness of these newer ILI modules and how well they meet current information literacy competency standards. Therefore, a research gap exists in assessing the relevance, impact, and efficiency of modern ILI programs in the context of today's academic environment.

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