

INFORMATION LITERACY SEEKING SKILLS IN FORMULATING RETRIEVAL STRATEGIES AND TOOLS FOR EDUCATIONAL TOPIC AMONG MALAYSIAN TEACHER EDUCATION TRAINEES

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Abstract

The case study focuses on the Information Literacy Seeking Skills (ILSS) by undergraduate trainees of the Malaysian Teacher Education Institute in the states of Kedah, Perlis and Penang (Northern Region) of Peninsula Malaysia. The skill is considered as highly important for trainee teachers to acquire in a comprehensive understanding of information literacy to pursue a research. Yet, it is a pivotal fact indicated by recent researchers that most future teachers often enter teaching without these skills. The prime objectives of the study is to analyse ILSS on problem, issues and behaviours of the trainees in formulating retrieval strategies and tools in educational topics and analyses their competency prior to doing an education action research. The study employed a qualitative approach by using a face to face interview and document analysis based on 14 full-time final year undergraduate trainee teachers for the Educational Degree Programme doing their school based action research. The case study employed the exploratory, descriptive and explanatory survey methods to underpin inferences, interpretations, predictions and explanations. Findings of 479 quotations from all 14 respondents indicate that the trainees of the northern region do exhibited ILSS and competencies in doing research. It is also important that out of the total quotations mentioned, only 236 quotations (49.3%) imply to the ability to formulate retrieval strategies and tools in educational topics. Almost half of them have the competencies related to ILSS prior to doing an education action research. The finding hopes to give insights to stakeholders on the way to move forward in terms of needs, process and outcomes in accordance with the Malaysian Higher Education Blueprint 2015-2025.

Keywords: Information literacy competency; Information Literacy Seeking Skills; Information Literacy Research Process Model; Teacher Education

1.0 Introduction

Many researches in the 21st century education has contemplated changes on research skills regarding ‘Information Literacy Seeking Skills’ (ILSS) of accessing, evaluating and applying appropriate information in the content-area of specializations (Breivik, 1998; Breivik & Gee, 2006; Mohd Sharif, 2008; Siri Sena Baba Hamid, 2016) as the backbone of information literacy (IL) competencies among undergraduates. Recently, researchers have shown an interest on IL in teacher education. Teacher trainees today rely on more IL skills compared to their predecessors in doing their research process. These skills of navigation, evaluation and usage of information competently are vital for projecting teaching and learning processes (Jenkins, 2006). Significantly, a trainee’s competency in research processes also changes to meet the newly established standard (Education & Behavioural Science Section [EBSS], 2011). Despite this, other researchers like Carr (1998), Maimunah Kadir and Mohd Sharif (2003); Lavery and Reed (2006), Mohd Sharif (2008), Gandhe (2011), Kocic (2012); and British Educational Research Association [BERA] (2014); and Siri Sena Baba Hamid, Fuziah Mohd Nadzar, Wan Ab. Kadir Wan Dollah and Dang Merduwati Hashim. (2015) have found trainees often enter into teaching without the necessary IL seeking skills in conducting educational research process.

The Malaysian Higher Education Blueprint 2015-2025 (Malaysia, Ministry of Education, 2015) further pillared this research process as one of the seven agenda to be ascertained during the training of teachers. Hence, Malaysian Teacher Education Institute (MTEI) is hold responsible in preparing the trainees with these skills before they turn out as teachers. The certainty of these IL competencies is fundamental to the Ministry’s expectation. Nonetheless Maimunah Kadir and Mohd Sharif (2003) had raised questions about the poor quality of the teachers in conducting their research process, even though IL programmes existed in schools and higher education. Henceforth, Saidatul Akmal, Dorner and Oliver (2011) studied issues related to IL seeking skills in the Malaysian schools; with the purpose to determine the importance of IL practices in students’ learning. The continuance of this need follow through when these students turn up as trainee teachers. How much of these IL seeking skills in turn are used by these trainee teachers in their research process is yet to be answered? This study investigates the trainee teachers’ ILSS with the purpose to see their diverse ability to formulate research needs through information retrieval strategies and tools for educational topic. This ability holds a major important prior in doing research process for their final action research academic project paper.

2.0 Background of the study

The cognitive skills such as ‘critical thinking’, ‘problem solving’ and ‘decision making’ is nothing new in the teaching arena (Eisenberg & Berkowitz, 2001). ILSS incorporate all these as ways to ‘learning how to learn’ in pursuing new knowledge

(ALA, 2001). ILSS is fundamental in doing a research whether for the economic and personal success today (Cook & Cooper, 2006). Over the decade these key characteristics are defined as the ability of those who are 'information literate'. These are the skills that are coined in the *IL competency standards for higher education* by ACRL (2000) and later mapped by EBSS (2011) for a more relevant standard for education-specific associations and organizations.

In tandem with this change the actual distinction between IL competency behaviour among the trainee teachers has a cohesive effect on how they accelerate their skills further (EBSS, 2011). These skills must be affirmed during their course training and schools practices to equip them with the 21st century's teacher's basic skills (Carr, 1998; Edzan, 2008 & Saidatul Akmal Ismail; Dorner & Gillian, 2011). The teacher education curriculum in the MTEI offers preliminary subjects of IL for the first semester after the trainee teachers' enrolment. The curricular, later requires them to do a final project of school based action research during the seventh semester and submit a written report during their eighth and final. The trainee teachers are also required to complete a pre-service practical training at local schools during the seventh semester and gather information on their project.

3.0 Brief Literature Review

The importance of IL was never disputed by MTEI; as the Ministry of Education (MoE) embarked on their mission for the 21st century future teachers. The MoE explains the mission of producing trained teachers who are competent and spirited educators; through its dynamic plan of teacher development programmes in order to achieve world-class school education (Malaysia, MoE, 2011). In doing so, it is highly important to see that trainee teachers have acquired a comprehensive understanding of IL (Schleicher & Rubin, 2012). Consequently, it is hoped that with these understandings the MTEI will guide the trainee's own knowledge creation activities; that will ultimately affect their future students (Stubley, 2002; Jenkins, 2006). The seriousness, of preparing these new teachers for the on-going professional in the current teaching force is the key to educational improvement that was pointed out by Cobb, Darling-Hammond, and Murangi (1995) during the APEC (Asia-Pacific Economic Cooperative) in 1995. Yet, it is a pivotal fact indicated by more recent researchers such as Laverty and Reed (2006); and Kocic (2012) that most future teachers often enter teaching without the necessary IL skills and knowledge.

The Malaysian National Philosophy of Education (Malaysia, MoE, 1988) was designed to produce Malaysian citizens who are trained with special skills; knowledgeable and competent, responsible and capable to contribute towards the betterment of the nation, family and society. In order to achieve this, the country needs well informed literate teachers that understand their commitment through research by integrating new initiatives in their effort to improve the quality of school education. Based on this, the development of Education Master Plan 2006-2010 for Malaysia was put forward; incurring importance of enhancement in teacher training and research process in education (Malaysia, MoE, 2006).

In sustaining the MTEI's mission, the teacher education institute aspires to produce highly trained graduates with life-long learning skills. This resides on the concept that have long been the cognitive skills of 'critical thinking', 'problem solving' and 'decision making' that was diversely cited by Toffler (1991) and later by Doyle (1994). In America these concepts had long been a signed by the Secretary's Commission on Achieving Necessary Skills (SCANS, 1991) for 'what work is requires of schools' for the 21st century learners. Besides this, studies by Carr (1998), Laverty and Reed (2006) and Gandhe (2011) have shown that pre-service teachers often emerge in teaching without the necessary ILSS that they are needed to perform in schools. How much of this is true in Malaysia? In Malaysian education system the role of MTEI is firstly seen as the most important constitution in giving the prerequisite experience to these undergraduates. Whereby, the MTEI's teacher education programmes will continues to shape how teachers should promote learning to young Malaysian in the country. Since ILSS is considered as the backbone of IL competencies in doing a doing a research process by academicians like Breivik (1998); Breivik and Gee (2006); Mohd Sharif (2008).

As the most significant and costly resource in schools, teachers are central to school improvement efforts. Improving the efficiency and equity of schooling depends, at large measure, that competent people works as teachers. These teachers must possess high quality of ILSS in accessing, evaluating and applying information in teaching and researching (Organization for Economic Co-operation and Development; cited in Education Master Plan, 2006). Even though the Multimedia Development Corporation (Malaysia, MDC, 2005) was the hope of establishing the 'integration of information and communication technology' (ICT) within the education sectors; but the importance of having competent teachers in undertaking it was not mention in the Blueprint. The contrary findings comply with Siri Sena (2002) that 60% of high schools in the State of Selangor had no form of IL Programmes assessment. This portrays a doubtful condition of teachers on ILSS in schools at that moment.

The researcher sees that it is important to evaluate how much of this ILSS are involved during the trainees' research process (Siri Sena Baba Hamid, 2016). These skills can never be initiated through research and innovations if the trainees do not have a stable foundation of the ILSS in their research process. Therefore, it is fundamental to evaluate these trainee teachers based on their IL competencies and behaviour to do so.

4.0 Research Objective

The research aims to discover with certainty the IL competencies acquired by the final year teacher trainees of the MTEI in the northern region of Peninsula Malaysia. The study attempts to understand the trainees' ILSS in formulating retrieval strategies and tools (Breivik, 1998; Breivik& Gee, 2006; Mohd Sharif, 2008) prior to doing research process for their final project paper. The specific ILSS in research process needed for the trainee teachers are based on the benchmarked outcomes of EBSS (2011) IL

standard for 21st century teacher education. The following underlines these research prime objectives;

- i. To analyse ILSS competency issues and behaviours of the trainees in formulating retrieval strategies and tools in educational topics.
- ii. To analyse ILSS competency prior to doing an education action research.

5.0 Research Question

The research aims to see how ILSS relates to producing information literate trainee teachers in doing research process. The following questions clarifies it the study's intention.

- i. What are the ILSS issues and behaviours involved in formulation retrieval strategies and tools in education topics?
- ii. Are they competent in ILSS prior to doing an educational action research?

6.0 Methodology and Instruments

This case study is design as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context” (Yin, 2003). The scene of inquisition is ILSS in research process among trainee teachers within their true setting (Eisenhardt, 1989) of the five northern region campuses within Peninsula Malaysia. The researcher emphasizes on its ‘logical problem’ and not its ‘logistical problem’ as indicated by Yin (1994a & 1994b); Cohen, Manion and Morrison (2007). The study is designed to specify how the investigation is addressed to the ‘logical problem’ or critical issues of ILSS competency among the final year trainee teachers in doing research process for their final project paper.

The case study employed Denzin and Lincoln's (2011); and Ololube and Kpolovie's (2012) qualitative approach in conducting scientific research in education. This study uses a face to face interview and document analysis on the 14 purposive samples from the five MTEI in the northern campuses. The case study employed the *exploratory, descriptive and explanatory* survey methods (Voss et al., 2002; Saunders et al., 2007) to underpin inferences, interpretations, predictions and explanations. All the 14 purposive samples were registered in January 2010 and due for completion in December 2013. The researcher has used ATLAS-ti software (7th editions) in analyzing the transcription from interviews conducted on the purposive samples that represent a more grounded form of evident. The analysis done is based on coded of the transcription and their relationship using ATLAS-ti, to see the significant of each information literacy indicator and their outcomes within the trainees' research process. The ATLAS-ti coding system is based on the ‘theory of groundedness and density’. This analysis underpinned two concepts of ‘groundedness’ and ‘density’. Konopasek (2008) termed the ‘groundedness’ as the number of data segments (e.g., quotations) associated with a particular code, whereby the term ‘density’ is the number of links (associations) between a code and other codes, families of phases, or memos about the code.

7.0 Findings

The total of 479 quotations underpinned the ‘groundedness’ and ‘density’ of the findings for the ILSS of formulating retrieval strategies and tools in educational topics’ in research process by the trainees and the following sections explains each of the research questions.

- i. *What are the ILSS issues and behaviours involved in formulation retrieval strategies and tools in education topics?*

Through the interviews’ transcription a groundedness total of 236 quotations indicated how the 14 respondents’ access information in the process of doing an educational action research. There are 54 quotations from these trainees identifying that they know where to obtain the needed information regarding their educational research topics. Findings from the interviews implied that all the trainees are able to identify their purpose of doing a research. Out of the 14 respondents, only 10 respondents had indicated that in the process of formulating their research topic; they have to begin it by identifying the purpose of their study. There are 30 quotations indicating the ‘groundedness’ of the 10 respondents from the ATLAS-ti analysis.

These 10 respondents had indicated that in identifying their purpose of doing their educational research process; their determining factor becomes a part of their research purpose. This finding is contradicting to the EBSS (2011) standard that states ‘the determining factor is seen as a supporting outcome to the first indicator (defines needs for information)’. As such, this study found that the following are the determining factors in identifying the trainees’ purpose for their educational research. The 10 respondents indicated these following four determining factors are prior important in order for them to proceed in the process of identifying their needs for information. These following four determining factors are sorted by priority as:

- a. Discussion and guidance from supervisors and lecturers from the same field,
- b. Discussion and guidance from school teachers (*guru pembimbing*) and class teachers during their practical training,
- c. Observation of their school students’ work during their practical training and,
- d. Discussion with friend, classmates and/ or housemates in clearing their conceptual ideas.

The following network-view shows tangible relationship indicated by the four determining factors as their competency performance indicators mentioned above used in the process of formulating retrieval strategies and tools in educational topics by respondents from ATLAS-ti analysis. Drawing from this analysis as seen in *Figure 1* gives a better conceptual condition of ‘density’ to answer the first research question. There are three dominating information ‘density’ access factors that can be seen from the network-view. These ‘density’ factors are responsible for the outcomes on how the final year trainees *formulate their needs through information retrieval strategies and tools for research in educational topic*. The three ‘density’ are similar to what was mentioned in EBSS (2011) as the IL competencies outcomes that holds prior important in doing any research process. These are;

- a. ‘identifying purpose’ (*EBSS – 1.1*),

- b. ‘formulating key questions’ (EBSS – 2.1) and;
- c. ‘recognizing different disciplines’ (EBSS – 3.1).

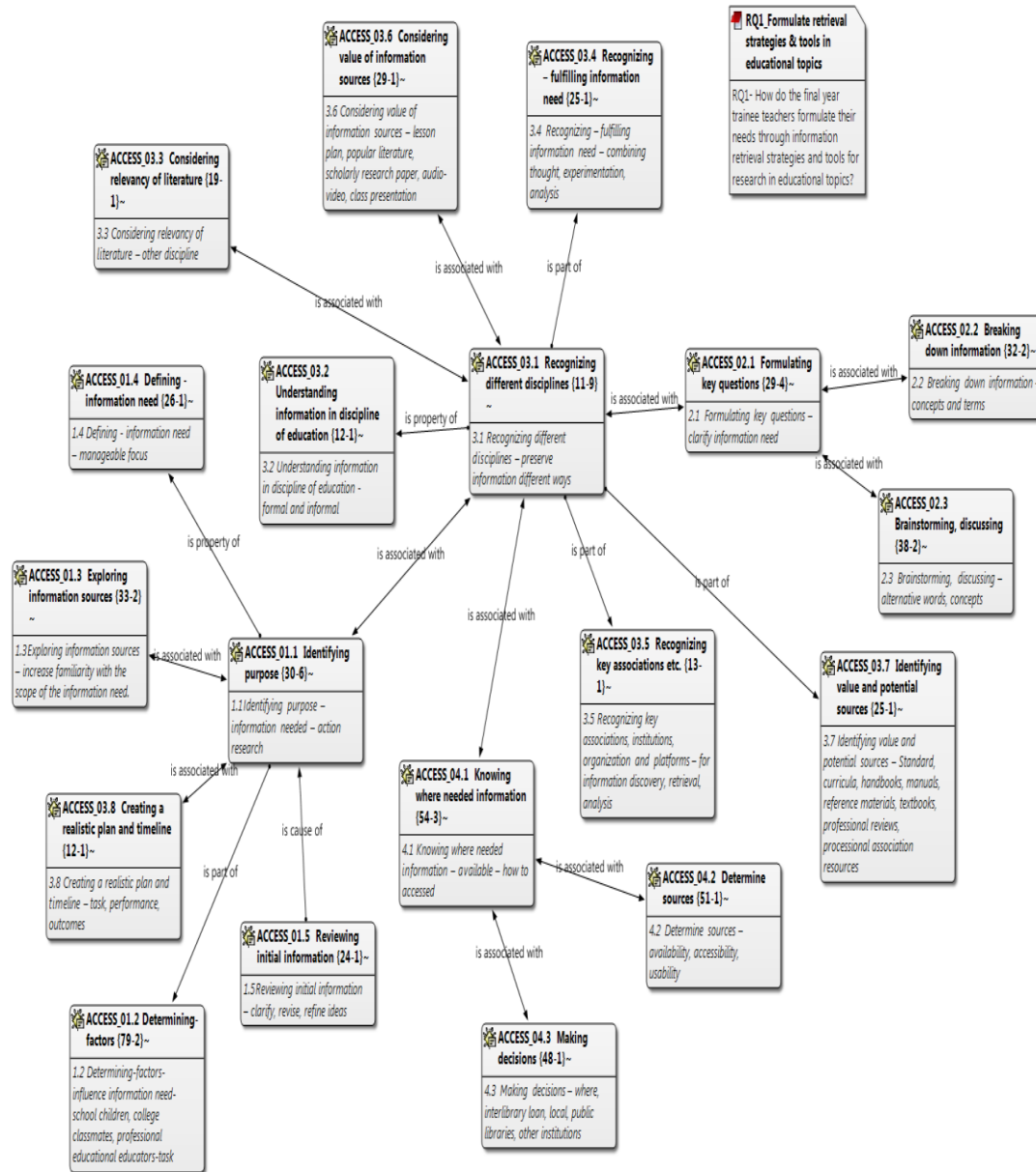


Figure 1: Network-view of ‘formulate retrieval strategies and tools in educational topics’

As seen here these three outcomes are ‘associated with’ each other for all cases of the respondents involved. In the outcomes of ‘identifying purposes’ there are 30 ‘groundedness’ value in relation with ‘density’ of ‘determining factors’ (EBSS – 1.2), ‘exploring information sources’ (EBSS – 1.3), ‘defining information need’(EBSS – 1.4), ‘reviewing initial information’(EBSS – 1.5),‘creating a realistic plan and timeline’ (3.8) and ‘recognizing different disciplines’(EBSS – 3.1). The IL factor of ‘recognizing different disciplines’ (EBSS – 3.1) mentioned in EBSS (2011) indicated a strong groundedness value of 11. This IL factor ‘is associated with’ other nine ‘density’ factors for the outcomes of ‘information accesses’.

Table 1 explains how the groundedness values the other nine ‘density’ factors in supporting IL competencies skills in association to how the respondents ‘formulate retrieval strategies and tools in educational topics’ in prior to doing their research process.

Table 1: Relationship of recognizing different disciplines

	<i>Outcomes (Density Factors)</i>	<i>EBSS Codes</i>	<i>Relationship (Groundedness)</i>
1	Formulating key questions	2.1	is associated with (29)
2	Recognizing-fulfilling information need	3.4	is part of (25)
3	Considering value of information sources	3.6	is associated with (29)
4	Considering relevancy of literature	3.3	is associated with (19)
5	Understanding information in discipline of education	3.2	is a property of (12)
6	Identifying purpose	1.1	is associated with (30)
7	Knowing where needed information	4.1	is associated with (54)
8	Recognizing key association etc.	3.5	is part of (13)
9	Identifying value and potential sources	3.7	is part of (25)
<i>Access Information - Groundedness Total</i>			<i>236</i>

The third IL factor that carried the most groundedness value of 29 is ‘formulating key questions’ that incurs two associated competency ‘density’ factors of ‘*breaking down information*’ and ‘*brainstorming and discussing*’. Thus, the findings imply that in order to formulate educational topic in their research process, these trainees in fact do have the indicated information literacy competencies as mentioned by EBSS (2011). These findings underline the fact that trainees can associate IL competency issues and behaviours’ in ILSS of accessing information for their research in educational topics.

ii. Are they competent in ILSS prior to doing an educational action research?

Almost half of the respondents have the competencies related to ILSS prior to doing an education action research. The overall findings give us an insight to what is expected from these trainees due to their completion of their research process. It is a sound fact from the in-depth interviews; that the total ILSS competencies in prior to doing a research process is within their ability. Findings of 479 quotations from all 14 respondents indicate that the trainees of MTEI in the northern region campuses do exhibited ILSS competencies skills in doing research. It is also important that out of the total quotations mentioned, only 236 quotations (49.3%) imply only to the IL of accessing as the ability to formulate retrieval strategies and tools in educational topics’. This profound insight, should not be taken lightly as it is important for the

trainee to develop further their IL skills and competencies of evaluating and applying information in research process; which was not seen here in the mere future.

8.0 Conclusion

The study has asserts the paragon of excellence to which level of IL is needed in the making of the Ministry's undergraduate teachers. It is hope that the study will archetype and mould a conception of IL needed in the making of young teachers in research process in the country. Through which the findings will spells out the needs, process and outcomes as a standard to the Ministry of Education to specify indicators that can identify a final year trainee teachers as 'information literate' in a research process. These indicators are pivotal in accordance with the National IL Agenda for Malaysia (NILA) as pointed out by Edzan and Mohd Sharif (2005) studies and the Malaysian Higher Education Blueprint 2015-2025 (Malaysia, Ministry of Education, 2015).

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