Learning History using Information Process Approach for Year Six Children

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Abstract

Learning history is always associated with intent memorization of names, battles and dates, and thus rarely a favorite subject among primary school children. Underpinning by information process approach, this study aimed to improve history knowledge and interest of year five children. The study employed an action research study and involved twelve upper primary school children. Data was collected using history test, questionnaire, interview, and classroom observation and later analyzed using descriptive statics and thematic analysis. The study found that the information process approach had helped the children to increase their history knowledge and interest by helping them to analyze, synthesize and present historical facts into meaningful understanding. The study indicated that the information process approach could be applied across classroom learning to facilitate meaningful learning among primary school children especially in learning information-loaded subjects such as history.

Keywords: Information Literacy, History, Information Process, Primary Schools, Malaysia

Introduction

Learning in the 21st century requires students to shift their role from passive information receivers to knowledge constructors and users. The changing role of students is much needed to support student-centered learning in the 21st century that gives responsibility to students to plan and attain learning outcomes, and ultimately build new knowledge and its cognitive mediated artefacts. The building of new knowledge is a process of building new cognitive artefacts resulting from a common purpose, and discussing and synthesizing ideas in a group of members of a learning community (Scardamalia & Bereiter, 2003). The common purpose of building new knowledge within the learning community is to involve students deliberately and consciously in a process of advancing existing public knowledge. Scardamalia & Bereiter (2003) defined public knowledge as existing knowledge that could be accessed in this world, and used and advanced by others. Accordingly, the outcome of knowledge building in learning would be the development of students who are able to develop or modify existing public knowledge into assumptions, methods, theory, models and other forms of knowledge (Paavola & Hakkarainen, 2005).

Engaging students in information process which include information access, interpretation, analysis, management, creation, communication, storage and sharing (The Library and

Information Association, 2018) could facilitate students to independently construct meaningful knowledge which is the pre-requisite for student-centered learning. In the context of Malaysia, student-centered learning has been highlighted in the Malaysian Education Framework as learning approach that would support primary, secondary and tertiary education. The framework emphasized students to acquire information problem solving and lifelong learning skills to enable them to participate successfully in the learning process. Later the Malaysian Education Development Plan 2013-2025 (Ministry of Education, 2013) highlighted the need of producing students with inquisitive and innovative minds who are able to construct and use new knowledge to solve problems. Such aspiration requires students to acquire and apply information process across subjects and would facilitate students to engage in knowledge building process.

On the other hand, learning history as a subject is always associated with memorizing names, battles, dates and other historical facts. However, most students faced difficulties in accessing and memorizing historical facts (Pius & Salleh, 2016) which often led to students' loss of interest in History (Zamshah & Othman, 2016). For example, Ishak and Othman (2016) found students having difficulty to memorize precise names, events and dates in a chronological order due to a high volume of information that they need to memorize. Moreover, Shamsuddin and Salleh (2016) discovered that students have difficulty in describing the historical facts using their own words as well as presenting the historical facts in a meaningful way during classroom learning. If the issues were not addressed immediately, students particularly in primary schools would unable to search, analyze, synthesize, and present historical facts to inform their knowledge building process. The young children are also unable to appreciate the use of historical facts in solving any information problems that they may have faced, and ultimately would lose interest to acquire and use history knowledge in a meaningful way. Therefore, this study aimed to assist year five children to learn history using information process approach.

Information Literacy and Information Process
Information literacy is defined as a set of information-related skills and abilities needed to undertake information tasks, which include information access, interpretation, analysis, management, creation, communication, storage and sharing (The Library and Information Association, 2018). Accordingly, information-related skills or information skills would assist society members "to satisfy their information needs, pursue independent lifelong learning and contribute to the development of an informed society" (Dawson & Kallenberger, 2015, p.5). In any learning process, information skills enable students to add to their core knowledge, use a variety of information sources and the necessary technology, process the information that surrounds them and be confident in their ability to use information effectively (Dawson & Kallenberger, 2015).

Dawson and Kallenberger (2015) further argued that information skills are made up of two elements. Firstly, information skills are related to locating information which includes skills related to finding information in a variety of forms (e.g., online articles, audio and video materials, printed books and journals, maps), from a variety of sources (e.g., experts, practitioners, library) and within sources (e.g., using an index, keywords). Secondly, information skills are related to understanding and using information which includes asking questions; selecting, evaluating and, if necessary discarding information; combining

information from different sources; presenting the most relevant information; presenting information according to the audience; and gauging the success of the presentation.

The application of information skills in completing any information tasks is known as information process. The information process includes a circular series of physical and intellectual information-related steps. The steps comprised of 1) Defining (what do I really want to find out?), 2) Locating (where can I find the information I need?), 3) Selecting (What information do I really need to use?), 4) Organizing (How can I use this information?), 5) Presenting (How can I present this information?), and 6) Assessing (What did I learn from this?). The application of information process approach is often associated with ubiquitous learning. Ubiquitous learning or u-learning is defined as "[l]earning that happens anytime and anywhere in the right way with the right content using ubiquitous computing technology" (Tahir et al., 2018). In ubiquitous learning, technology supports students to access, analyze and present information via online applications to complete their information tasks. Characterized by accessibility, adaptability, context awareness, immediacy, interactivity and permanency, ubiquitous learning provides access to students to learn beyond classroom learning, as well as helps students to retain their works during the learning process. Combining information process approach and ubiquitous learning would enable students to identify, analyze, and synthesize information for constructing meaningful understanding and later share the understanding with classroom peers and teachers at students' convenience time and place and ultimately support students' personalized and independent learning.

Methodology
This study employed action research design by Lewin (1946) which comprised six phases of diagnosis, planning, implementing, evaluating, reflecting and communicating. Lewin's model was chosen by the study because the five phases provide a systematic structure for the study to undertake the research and report the research findings in systematic and transparent manners. The study completed all the research phases in approximately six weeks.

Firstly, during the diagnosis phase, the study collected data using pre-tests, interviews, classroom observations and questionnaires to identify a problem to be solved by the study. Secondly, during the planning phase, the study planned an information process approach that would hypothetically solve problems identified during the diagnosis phase. During this second phase, the study also seek permission from the history head teacher to implement the approach on selected year five students in the school, as well as planned the timeframe of the implementation of the approach.

Thirdly, during the implementation phase, the study conducted four information process workshops on four sequential Saturday to help students to analyze historical facts using i-Think map, and synthesize and present the information using Coggle online application. All materials developed by the students were saved and organized in Google drive, providing access for students to work with materials beyond the workshop period. Later, students were required to use the developed materials to complete a history presentation task at home. The topic of the history presentation was local leaders who fought against British's occupation. The topic was selected because the study had found that students faced great difficulty to match respective names, battles and dates for local leaders who fought against British's occupation. Facilitated by cloud computing, i.e. google drive, and i-Think and Coggle

applications, the learning process is known as ubiquitous learning in which learning takes place anywhere at any time (Sulistyo & Agustina, 2013). During the learning, students would save his works developed in i-Think and Coggle in Google drive and present the works to class. At the end, the students would present their work in history presentation which is the outcome of analysis, synthesis and presentation of historical facts using i-Think and Coggle applications respectively. The workshops and history presentation were run in Malay language, a national language in Malaysia and conducted outside formal school time.

Fourthly, during the evaluation phase, the study evaluated presentation materials developed by the students using i-Think and Coggle application, and assessing students' history knowledge and interest after the implementation of GiT-C approach. Fifthly, during the reflection phase, the study reflected GiT-C approach on students' history knowledge and interest based on data analysis from pre and post history test, interviews, classroom observations and questionnaires. Finally, during the communicating phase, the study prepared a research report and shared the report with history teachers in the school where the study took place as well as with other practitioners and researchers.

The study involved five children in year six at a primary school located in a rural area in Perak, Malaysia. The students were selected by the study because they have lowest marks in their history classroom presentation tasks. Upon students' agreement to participate in the study, the study further obtained written consent from the students' parents before conducting the study. The written consent was important because the information process approach would be conducted on Saturday which was outside normal school days. Moreover, the study received approval from the head of history teacher in the school who hoped findings of the study would improve teaching and learning history in the school.

The study also used a pre and post history test to measure students' knowledge on local heroes who fought against British's occupation. The test comprised 10 matching items and 10 multiple choice items which were taken from exercise history books for year five students. The study also collected data using interviews with students which were conducted before and after the information process was implemented. The interviews were used to access the students' view, interest and knowledge on history for year five. Finally, the study employed classroom observation to further gauge students' interest in history as well as students' knowledge in historical facts during History presentation activities since the beginning of the year. Lastly, the study used a questionnaire to collect data regarding students' interest in history, understanding of information analysis and synthesize, and knowledge on thinking maps and Coggle application. The questionnaire was administered to students before and after the implementation of the information process approach. Finally, the study employed descriptive statistics and thematic analysis for data analysis. Data from pre and post tests and questionnaires was analyzed using descriptive statistics such as percentage and frequency. Additionally, data from interviews and classroom observations was analyzed using thematic analysis.

Findings and Discussion
Data from the interviews showed that the most difficult topic in history for year five students is local heroes who fought against British's occupation. The topic involved many names, dates and events that were too confusing for students to memorize in a chronological order. On the

other hand, data from classroom observations indicated that year five students show interest in history and have a sense of patriotism while explaining Malaysian independence and singing Malaysian patriotic songs during classroom history presentation. However, findings from classroom observations established that there are issues related to students' history presentation tasks and history knowledge. Among others, the observations showed that although students take a long time to complete their presentation materials, yet the materials that they had prepared contain insufficient historical facts. Moreover, a question and answer session conducted by the teacher right after the history presentation further revealed students' misunderstanding of the historical facts and presentation content. The observation also demonstrated students who attend the presentation as audience are unwilling to ask questions about the topic covered during the presentation. These were some of the issues that were identified that had led to students attaining low marks in their history presentation task and history knowledge particularly in topics that involved a lot of history facts, such as local heroes who fought against British occupation. The observations also showed that students prefer to use conventional materials such as papers and cards to develop their presentation materials instead of presentation applications available freely on the internet. By doing so, students miss a lot of interesting features offered by the applications to facilitate their history presentation.

The development and implementation of the information process approach aimed to engage students in the information process via ubiquitous learning to complete their history presentation materials. The task required students to identify and extract historical facts related to local heroes who fought against British occupation in year five history textbooks. Diagram 1 showed a page sample of textbooks used by the students for their history presentation task.
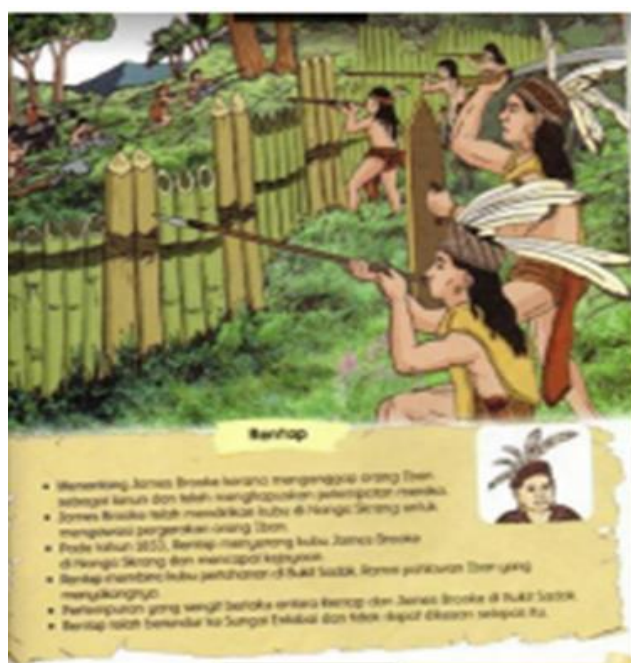

Diagram 1: A page sample from year five history textbooks that students had used to identify relevant historical facts for their history presentation task

Upon the identification of relevant historical facts, the students extracted and analyzed the facts using a circle map available in i-Think online application. A sample of a circle mind map is shown in Diagram 2. The students further synthesized and presented the historical facts in a meaningful way using Coggle mind map online application. Diagram 3 illustrated a sample of a mind map developed by a group of students using Coggle. All presentation materials were kept and organized in Google drive which provide access to students to edit their work at their own convenience time and place. In the study, the ubiquitous learning occurred whenever the students used i-Think and Coggle online applications to complete their history presentation materials. The ubiquitous learning also took place whenever the students accessed, edited and organized the presentation materials in Google drive.

Diagram 2: A sample of circle mind map developed by a student using i-Think online application in which the students had extracted and analyzed relevant historical facts from their history textbooks

Data from interviews with students on the use of the information process approach also demonstrated that GiT-C approach had increased students' interest in history. Students viewed that ubiquitous learning using Google drive and i-Think and Coggle application was fun, interesting, and easy. Most of the students said that both i-think and Coggle help them to understand historical facts about local heroes who fought against English occupation. The students agreed that colour features in Coggle were interesting, and a history presentation developed by Coggle had helped them to better memorize names, dates and events of local heroes who fought against British occupation in Malaya in a chronological order. The students also reported that Coggle does not require them to write lengthy notes for the presentation. Using Coggle, the students only typed relevant information on the computer, and later saved and presented or shared their presentation. Accordingly, the students found presentation works developed by Coggle are easy to remember because they were compact and direct and do not contain lengthy texts as found in textbooks.

Diagram 3: A sample of mind map developed by a student using Coggle online application in which the student had synthesized and presented the historical facts in a meaningful way

The findings indicated that there was an increment in history knowledge before and after the GiT-C approach was implemented. As illustrated in Table 1, there was a 100% increment of students attaining grade A in history knowledge, indicating that the information process approach had helped students to analyze and synthesize historical facts and and ultimately improved their history knowledge on topics of local warriors who fought against British Occupation that involved many names, dates and events that were too confusing to memorize in a chronological order.

Table 1
Pre and post test result before and after the implementation of the information process approach

Grade (Marks)	Pre-test	Post-test
A (80-100)	0	12
B (65-79)	0	0
C (50-64)	5	0
D (40-49)	7	0
E (0-39)	0	0
Total	12	12

Data from questionnaires also indicated that there is an increase of students' interest in history before and after the information process approach was implemented. Table 2 illustrates the frequency and percentage for each item in questionnaires used to gauge students' interest in history before and after the implementation of the approach.

Table 2
Students' interest in history before and after the implementation of the information process approach

No	Items	Pre-test Frequency (Percentage)	Posttest Frequency (Percentage)
B1	I like History subject	9 (75%)	12 (100%)
B2	History is a fun subject	11 (91.7%)	12 (100%)
B3	History is a difficult subject	11 (91.75)	1 (8.3%)
B4	I could learn History subject on my own without teacher	0 (0)	8 (66.7%)
B5	I could learn History subject with teachers' guides	8 (66.7%)	12 (100%)
B6	I could better understand History subjects with teachers' teaching	12 (100%)	12 (100%)
B7	Historical facts are difficult to memorize	2 (16.7)	10 (83.3%)
B8	I understand historical facts contained in History topics for Year Four to Year Six in a chronologically order	8 (66.7%)	12 (100%)
B9	I understand History topics after learning the topics	11 (91.7%)	12 (100%)
B10	I hope to attain excellent results for by History subject	12 (100%)	12 (100%)

Data analysis indicated that the information process approach had helped the students to better develop and present their history presentation during classes. As illustrated in Table 3, the students viewed that the development of i-Think and Coggle maps had helped them to identify, analyze and synthesize relevant information, and later use the information to develop their history classroom presentation.

Table 3
Students' information search before and after the implementation of the information process approach

No	Items	Pre-test Frequency (Percentage)	Posttest Frequency (Percentage)
C1	I could easily search information in history textbook	7 (58.3%)	12 (100%)
C2	I could search historical facts in History textbook	8 (66.7%)	12 (100%)
C3	I could explain historical facts after reading textbooks	7 (58.3%)	11 (91.7%)
C4	I found it is easier to explain historical facts after developing i-Think and Coggle maps	5 (41.7%)	12 (100%)
C5	I like to do history presentation during classroom presentation	7 (58.3%)	12 (100%)
C6	I don't feel scared and nervous while presenting my history works during classroom presentation	10 (83.3%)	12 (100%)
C7	I could easily memorize historical facts in a chronologically order when I am using i-Think and Coggle maps	5 (41.7%)	12 (100%)
C8	I can develop materials for history classroom presentation using i-Think and Coggle maps	6 (50%)	12 (100%)
C9	I like to become a leader in my history group classroom presentation	9 (75%)	12 (100%)

Lastly, Table 4 indicated that although students have been exposed to i-Think application, they have never been exposed to Coggle application. Data analysis also showed that the information process approach had also increased students' interest, knowledge and skills of using Coggle application.

Table 4
Students' view of -Think and Coggle applications

No	Items	Pre-test Frequency (Percentage)	Posttest Frequency (Percentage)
D1	I know about thinking map (i-Think)	12 (100%)	12 (100%)
D2	I like to use thinking map (i-Think)	11 (91.7%)	12 (100%)
D3	I could search historical facts and use the facts to develop thinking map using i-Think	11 (91.7%)	12 (100%)
D4	I had heard about Coggle application	0 (0%)	12 (100%)
D5	I know how to use Coggle application	0 (0%)	12 (100%)
D6	I had seen classroom presentation using Coggle application	0 (0%)	12 (100%)
D7	I like to use Coggle application	0 (0%)	12 (100%)
D8	I could search historical facts and use the facts to develop thinking map using Coggle application	0 (0%)	12 (100%)

Discussion
The study established primary school students faced difficulties in accessing and memorizing historical facts which often led to students' loss of interest and knowledge in history as found by (Pius & Salleh, 2016; Zamshah & Othman, 2016). The study also indicated that the students having difficulty to memorize historical facts involving precise names, events and dates in chronological order due to a high number of available facts as argued by (Ishak and Othman, 2016). Moreover, the study also showed that the students face difficulty in describing historical facts using their own words while explaining the facts to other people as found by (Shamsuddin and Salleh, 2016).

The study proved that the information process approach supported by ubiquitous learning helps students to overcome these difficulties by helping students to identify, analyze, synthesize and present assorted and raw information into meaningful knowledge and understanding in a systematic way. By doing so, the information process approach assists the students to better participate in the knowledge building process in which they focus on the use and benefit of existing public knowledge such as historical facts available from history textbooks, and advancing and using the knowledge to develop new ideas about history and develop mediated cognitive artefacts such as mind map materials, that could be evaluated by their classroom teachers and used by their classroom peers to aid their history knowledge and understanding. Similar to previous studies, this study highlighted the importance of acquiring and applying information literacy in the process of knowledge building and solving information problems. The study also found that the information process approach is

facilitated by ubiquitous learning that enables students to access, analyze, synthesize and organize information such as historical facts at their convenience time and place. The study indicated that primary school students in the 21st century regardless of location are more inclined to engage in the knowledge building process at their convenience time and place; extending the learning process beyond classroom learning. Such findings are also supported by previous studies that highlighted the significance of ubiquitous learning in 21st century learning.

The study suggested that engaging students in information tasks and processes is a way forward to the knowledge building process in primary schools in the 21st century particularly in subjects that require students to memorize loads of information such as history. However, in order for students to complete the information tasks and processes, there is a need for teachers to expose students to information skills and help the students to apply the skills in their learning process. In addition to face to face classroom learning, the study suggested that ubiquitous learning to become permanent features in primary schools learning. Accordingly, there is a need for primary schools to provide infrastructure and applications that support the ubiquitous learning during and beyond classroom learning.

Conclusion

This study aimed to increase history knowledge and interest of year five students by implementing an information process approach that is supported by ubiquitous learning. Findings of the study showed that the information process approach and ubiquitous learning had helped students to analyze, synthesize and present historical facts, and ultimately increased students' history knowledge and interest. The study suggested that teachers need to expose students to information skills and engage students in information tasks to support the knowledge building process in primary schools. Additionally, there is a need for primary schools to provide necessary infrastructure and applications that support the ubiquitous learning during and beyond classroom learning particularly for information-loaded subjects such as history.

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