

Exploring the processes and problems in teaching, learning and researching Malay Manuscripts

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ABSTRACT

The paper explores the processes and problems of the Malay manuscripts community which comprises lecturers, students and researchers when teaching, learning and researching on Malay manuscripts. The data was obtained from several interview sessions, focus group discussions and through observations. The case study approach was adopted using lecturers teaching and students enrolled in a philology course and researchers on manuscript studies at the Academy of Malay Studies, University of Malaya. The results indicate that the lecturers mainly uses the "chalk and talk" approach when delivering their course; they refer students to one reference source throughout the course; they indicated that students must be able to read Jawi scripts to follow the course; the main assignment involved transliterating work from old Jawi scripted text into modern romanise Malay; and they would like to have access to more Malay manuscript texts that can be utilised by their students for their assignments. The students confirm that their main assignments involved transliterating work; their main source of reference is their lecturer; they are unaware of the existence of a digital library of Malay manuscripts; and are acceptable to accessing online manuscript resources and being able to hold online discussions with their lecturers and peers about their assignments. The researchers mainly uses printed text for their research; they use the computers mainly to word-process; and felt that online dictionary on classical Malay would help them in their research. The findings on problems and needs express by all three groups are mapped to a proposed framework of online platform for manuscripts studies which includes teaching, learning and researching, utilizing resources provided by MyManuskrip (Digital Library of Malay Manuscripts).

Keywords: Malay manuscripts studies; Digital library; E-Learning; philology; transliterating and annotation tools.

INTRODUCTION

The main objective of digitisation initiatives of cultural heritage such as ancient manuscripts in digital repositories or digital libraries is to preserve the fragile but valuable items and to make them widely accessible to the public. This has been evidenced by several projects such as the *Digital Library of Malay Manuscripts*, *MyManuskrip*, (Hilmi, 2007), the *British Library Digital Catalogue of Illuminated manuscripts*, *Better Access to Manuscripts and Browsing of Images (BAMBI)* (Rumpler and Calabretto, 1999), *Euro-Mediterranean Union framework of Medieval Medicine (EUMME)* (Bozzi, 2005), an *e-learning System for Greek Palaeography* (Drigas and Vrettaros, 2005), and the *Bovary project* (Paquet et. al, 2003).

Digital libraries however, have progressed from solely archiving digital materials to supporting other functions for their users such as being a platform for learning and also for research collaboration. In this context, digital libraries bring together collections, services and people to foster information and knowledge creation, dissemination, and use. Over the past few years digital libraries have been increasingly adopted into the learning and teaching environment since the progress of e-learning initiatives. There were reports about studies which utilized digital library in educational practices (Marshall et al., 2006; Zainab et al., 2008; and Yaron et al., 2008). This happens when digital libraries offer hard to get or rare materials to users who can use the resources to support teaching and learning in specialized studies such as historiography, studies on cultural heritage, and philology. Access to rare collection through digital libraries makes it unnecessary for students studying philology or manuscript studies or academics teaching such courses to go physically to the library, sit in closely monitored rare collection rooms for hours to study the rare and often fragile manuscripts. Digital libraries now make it possible for the manuscript studies community to work with the digitized surrogates.

Digital Library of Malay Manuscript known as *MyManuskrip* (available at <http://mymanuskrip.fsktm.um.edu.my>) is a digital repository of handwritten Jawi script (adapted from Arabic alphabet) in Malay language. Malay manuscripts date as early as the 15th century and represents the historical records of some 500 years of Malay historiography, laws of the Malay Sultanate, Malay governance, ancient foreign policy, folk sciences, medicine, religion, beliefs, Malay literature and culture, Malay rites and rituals, astrological and folk literature such as *syair*, *gurindam*, *hikayat* (Malay form of sonnets). *MyManuskrip* is a digitization initiative developed mainly to preserve, organise, and make manuscripts accessible through the web for researchers, scholars and public interested in reading, browsing or studying Malay Manuscripts.

Currently, *MyManuskrip* provides users with options to browse and search a single collection or cross collections and provide university departments that offer courses on manuscript studies the use of e-manuscript collections for teaching and learning, especially in transliterating works (Zainab et al, 2009). However, currently, *MyManuskrip* does not include an e-learning or teaching and learning module, especially in much needed areas such as transliteration and annotation activities. Zainab et al (2009) found that one of the problems faced by the manuscript teaching and learning community is being unable to establish a dynamic collaborative platform amongst researchers and scholars or groups of manuscript studies students involved in joint transliteration work. A digital library with an annotating and transliterating tool would help stimulate such social and educational networking. This paper examines user's processes and problems when teaching, learning and researching Malay manuscripts and their requirements for a tool to support the processes as an additional service provided in the *MyManuskrip* digital library.

LITERATURE REVIEW

The development of digital libraries of ancient manuscripts is still considered scarce mainly because of the lack of expertise and limited budget to embark on manuscripts digitization process. In 2007, the Digital Library Research Group at the Faculty of Science Computer and Information Technology, University of Malaya, came out with a digital library system, *MyManuskrip* or *Digital Library of Malay Manuscripts*. This initiative was started to provide a collaborative digital library environment for Malay manuscripts libraries to upload their digitized Malay manuscript collections into a union repository and share resources (Zainab

et al., 2009). *MyManuskrip* supports browsing, searching and online reading of the manuscripts deposited in the digital library. This digital library currently holds 179 titles from mainly two manuscript collections from the University of Malaya, Library and the Malay Documentation Centre, Dewan Bahasa dan Pustaka, Malaysia. This repository however could be enhanced by incorporating other features that could support teaching, learning and research using the available manuscripts.

In the UK, The British Library's *Digital Catalogue of Illuminated manuscripts* (accessible at <http://www.bl.uk/catalogues/illuminatedmanuscripts/welcome.htm>) contains a number of different manuscript collections including a rich collection of medieval and renaissance manuscripts. The digital library provides access to images and information about its manuscripts to students, scholars, and the general public for reference. It provides a simple search function that enables searching by keywords and dates and advanced search using different types or combination of information. Other services offered are static such as a thematic tour of various aspects of the British Library's illuminated manuscript holdings, with information about each manuscript, browsing and searching an illustrated glossary of terms and access to information about the scope and history of each collection.

The digital libraries above mainly provide digital materials for users from their archives. However, today it has become necessary to include other services that can support the teaching and learning process of manuscript studies by allowing individuals or group of collaborator to use the digital library for e-learning services.

Another initiative *BAMBI* or *Better Access to Manuscripts and Browsing of Images* is a European digital archive of medieval manuscript collections (Rumpler, 1999). It is developed to provide a virtual platform for historian and philologist to browse and navigate the manuscripts in the collection. Apart from being a digital archive, BAMBI also provides a tool for philologists to read and write annotations, navigate between the words of the transcription and match pieces of images in the numerated picture of the manuscript (Bozzi and Calabretto, 1997; Calabretto and Bonzzi, 1998). This system used the standardized hypermedia language HyTime (Hypermedia/Time based Structured Language).

Besides that, the *Euro-Mediterranean Union framework of Medieval Medicine (EUMME)* project is quite similar to BAMBI which focused on developing tools to facilitate users to read the manuscript collections it holds. The main objective of this system is to facilitate international collaboration among medico-pharmaceutical culture enthusiast. The collaboration here is mooted to overcome the geographical borders, ideological and religious barriers among the community. In this system there is no ideological assessment and foster the exchanges of data among the Centers involved in the project. It is a solution to the problem of transmitting information to external users in order to make manuscripts available in different historical and philological environments. EUMME uses a standard metadata description to exchange and manage information and allows users to access homogenous digital archives in a collaborative environment (Bozzi, 2005).

Similar with the *MyManuskrip* project, the *E-learning system for Greek Paleography* is an initiative to preserve antique documents and valuable manuscripts that focuses on Greek Paleography of the Byzantine era's collection of manuscripts. To value the collections in the educational practices, it provides an e-learning system that is interactivity. This e-learning system is a part of the D-Scribe Project, which is a complete program for the recording, manipulation, recognition and management of valuable Greek manuscripts and

antique documents. This effort begun with the preservation of manuscripts and later included an e-learning system that supports the process of teaching and learning of Greek manuscripts (Drigas and Vrettaros, 2005). However, this system currently mainly focuses the scholars as the users and is not opened to the public.

The *Bovary project* contains a collection of digitized manuscripts of Gustav Flaubert's manuscripts on Madam Bovary. This project contains a collection of manuscripts with limited services. The project was started with only the collection of manuscripts and without any collection of the transcriptions, and to help users to do the transcription, it provides a simple text editor. This initiative makes the transcription task more effective and helped produce structured textual representation adapted to users' requirements. The project provides an editing environment integrating document analysis methods and interactive tools (Nicolas et. al, 2003; Nicholas et al., 2004) as well as making available the original manuscripts collection to be collaboratively worked upon amongst researchers and specialists of Flaubert's works.

This study hopes to examine the possibility of integrating an e-learning tool to support the viewing, annotating and transliteration of Malay manuscripts using manuscripts held by *MyManuskrip*.

RESEARCH OBJECTIVES

The main objective of this study is to explore the processes and problems faced by lecturers who teach, students who learn and researchers who research on Malay manuscript studies and to ascertain their requirements for the development of an e-learning tool to support teaching and learning of Malay manuscripts using resources held in *MyManuskrip (Digital Library for Malay Manuscripts)*. Specifically, this research aims to:

- Examine the processes of teaching, learning and researching Malay manuscripts; and
- Propose a framework of supporting tools that can be utilized for teaching, learning and researching Malay manuscripts.

RESEARCH METHODOLOGY

The research approach is a case study which allows the researcher to explore in depth a program, an event, an activity, a process undertaken by one or more individuals. The case(s) are bounded by time and activity, and the researcher collects detailed information using a variety of data collection procedures over a specified period of time (Cresswell, 2003). This method is anticipated to be suitable in situations where the case instances are small and very focused as reflected by the very small number of institutions of higher learning offering manuscript studies as part of a philological course in Malaysia. In the University of Malaya, there are 3 faculties that offer courses that involve usage of Malay manuscripts and these are the Academy of Malay Studies, the Academy of Islamic studies and the Faculty of Art and Social Sciences. Other universities that offer Malay manuscript studies and research are Universiti Kebangsaan Malaysia, Universiti Putra Malaysia and Universiti Perguruan Sultan Idris. The case study in this context refers to the teaching and learning of manuscripts amongst students in Academy of Malay Studies, University of Malaya who uses Malay manuscripts as their study resources. The choice was based on convenience as the faculty members and the students involved are close at hand from the

researcher's own faculty. This proximity is expected to facilitate the interviews and meetings with academic staffs and students easier and monitored efficiently.

In order to fully understand how the Malay manuscript users study Malay manuscripts, interviews, focus groups and observations were chosen as the data collection methods. According to Hancock (2002), qualitative interviews are semi structured or unstructured. If the interview schedule is too tightly structured this may result in the failure to investigate or explore in terms of both breadth and depth. Semi structured interviews tend to work well when the interviewer has already identified a number of aspects he wants to explore. The interviewer can decide in advance the areas that need coverage but is open and receptive to unexpected feedback and information from the interviewees.

Individual interview sessions were conducted with persons who had been involved in the Malay manuscript studies such as lecturers who teach courses related to Malay manuscripts, Malay manuscript researchers, students and ex-students who have followed Malay manuscripts courses and persons who have contributed in terms of publications in Malay manuscripts. One of the interviewees is a Professor, who is teaching the course "Introduction to Philology" a course that requires students to handle and use Malay manuscripts as the main resources. The Professor is 40 years and has vast experience in Malay Studies. He writes and researches in Malay manuscripts and had experiences in doing research not only in Malaysia but also in well known manuscript repositories such as the University of Leiden, Holland, SOAS (School of Asia Oriental and African Studies) in London and also Indonesia.

Other participants were those directly involved in Malay manuscripts research and studies. These individuals were recommended according to their experiences in handling Malay manuscripts. They are lecturers who teach Malay manuscripts subjects, Malay manuscripts researchers, student and ex-student who took Malay manuscripts subjects and people who had contributions in Malay manuscripts world.

The main aim was to find out the current processes involved in manuscript studies and functions needed by users of Malay manuscripts in the reading, teaching learning and research environment. For the teaching part, the interviews focused on lecturers who had experiences handling manuscripts and also who are teaching Malay manuscript study. In the Academy of Malay Studies, the closest subject that offers Malay manuscript study is "Introduction to Philology". According to the Academy of Malay Studies Handbook (2008/2009), this course (JEEA2303), is a core course for students enrolled at the Department of Malay Literature at the Academy. At the end of the Introduction to Philology course the students are expected to be able to explain the concept of philology, know how to discuss the activities of European and local philologists in the Malay region, can assess and examine the philologists' works in their research in Malay manuscripts and can apply the knowledge of philology to the Malay manuscript that they have chosen as their study text for the class. At the end of the course, students are expected to be able to read, understand and analyze Malay manuscripts especially the old Jawi scripts used in most Malay manuscripts. Students are also expected to transliterate (from old Jawi script to romanise Malay) and translate (from old roman Malay to modern Malay) different manuscript versions and add their work as resources for future users to. For the learning part, this study focuses on ex-students of the "Introduction to Philology" course. The research part focuses on the students who are currently doing research at the doctoral level on Malay manuscripts.

Another data collection approach that will be used is the focus group. Focus groups can be used when, limited resources prevent more than a small number of interviews being undertaken or when it is possible to identify a number of individuals who share a common factor and it is desirable to collect the views of several people within that population sub group or when group interaction among participants has the potential for greater insights to a situation (Hancock, 2002). The focus group comprises 8 Academy of Malay Studies students who have taken the Introduction to Philology course. The students in the focus group presented their experiences in handling and using Malay manuscripts, and the problems they faced during the study. Participants were those who volunteered to be involved in the focus group discussion during the first stage of data collection in a response to a request for names of students who had attended the philology class. Members of the focus group were asked about their background especially on why they have chosen to follow the Malay manuscript studies, their suggestions on how to improve the study process. We have attempted to summarize the broad themes and the categories found in students' answers in the following section. The detail results for both data collection will be discussed in the findings and discussion sections.

The first phase of the focus group discussions took up about one hour and forty-five minutes. All conversations were recorded, with the permission of the students being interviewed. After the session, the recordings were transcribed into computer files. Care was taken by the researcher to assure the respondents that their responses will remain confidential. Once the final transcription report was written, copies were printed out to be verified by the respondents themselves. All of the focus group transcripts were read by the researcher and coded in the style of a case study approach to facilitate data analysis.

Finally, the observations approach was used by the researcher to get a view of the process of teaching and learning Malay manuscripts. During the second semester in the 2009/2010 session the researcher observed the Introduction to philology classes from 12 January 2010 until 6 April 2010. The classes were separated into 2 sessions which comprises lectures and tutorials. After discussing with the lecturer, he suggested that the researcher sits in to observe only the tutorial classes as it is in these sessions that the manuscript study discussions and practices were carried out. In these tutorial sessions the researcher merely observes without participating in the class activities. This helps verify remarks made during the interviews and focus group discussion sessions.

The total numbers of students in the tutorial classes observed was 46 students who were divided into two groups. The tutorial class which the researcher has chosen to observe was held on every Tuesday from 11am-1pm. During each tutorial class, the class discussions and activities were recorded and notes were taken to describe what took place in class. The thematic analysis has been chosen as the data analysis method. This type of analysis is highly inductive, as the themes emerge from the data and are not imposed upon by the researcher. From the combination of data from the interviews, focus group and observations, three category theme headings were derived.

RESULTS: PROCESSES AND PROBLEMS IDENTIFIED

This section of the paper will report the processes and problems identified from the interview sessions, the focus group discussions and the observation. Findings from the three data collection approaches were extracted and collated according to the different

types of stake holders, the lecturers with higher knowledge on Malay manuscripts who were handling and teaching Malay manuscript studies, the students who have very basic level of knowledge about Malay manuscripts who were registered or had undergone an introductory course in Malay Philology and the researchers who were researching on Malay manuscripts and who were registered for Ph.D. programme.

The findings from this study encompasses merging data through the coding process, which involves taking text data, segmenting sentences (or paragraphs) into categories, and labeling those categories with a term, often a term in the actual language of the participant. This process is recommended by Creswell (2003) in order to break responses into themes. The descriptions aims to highlight the process of teaching and learning Malay manuscripts presently practiced, the resources support available and the use of technologies in the teaching and learning process.

(a) Lecturers Teaching Manuscript Studies

The responses from lecturers were collated from the interview sessions and the observations. The following sections indicated the responses listed under broad themes.

(i) Teaching and Learning Manuscripts Currently Practiced

During the interviews, the lecturers described the main process of teaching Malay manuscripts, which mainly involves transliteration. Transliteration is the process of mapping from one system of writing into another, word by word, or ideally letter by letter and in this class, students need to transliterate the old jawi scripts into roman Malay without changing how the manuscript is supposed to read. One of the lecturer opined, "There are fixed method that had been taught in the class, all these methods can be found in the reference book. The methods are transliteration, transcription and annotation." When asked about the process of learning a Malay manuscript, one of the lecturers said that, "Firstly, students will do the transliteration and later the analysis. If they did the wrong transliteration, they will later produce a wrong analysis. Usually, I will ask them to see the librarian of National Library to help them to improve their work".

Another remarked, "As a philologist, all you have to do is to know how to read manuscript and do the analysis".

(ii) Supporting Resources for Manuscript Studies

Supporting resources in this context refer to time allocation for manuscript studies, availability of manuscripts originals and printed, problematic type of students following manuscript study course, the availability preservation initiatives and the availability of experts.

▪ Time allocated to manuscript studies

Lecturers indicated that manuscript studies in covered in only one course that is "Introduction to Philology" as one lecturer remarked, "In every semester, there are 14 weeks for lecturers to do the teaching, and this is problematic for us as we have to optimize this limited time". This shows that lecturers felt the time allocated to manuscript studies is insufficient.

▪ Resource Support

A lecturer from the Academy of Islamic Studies opined, "The students are always complaining that it is hard to find Malay manuscript resources. This year, our manuscript club is gathering all the manuscripts we can find and keeping them at the Academy. However, students still complain that it is hard to get access to them and the number of manuscripts is also very small. To solve this, I don't have any choice, but to make them refer to the printed version of manuscripts which is a simplified version done by other

researchers". This infer that instead of working on original manuscripts students were asked to use the printed or edited version of Malay manuscripts, which means that they worked on other people's work. This results in the duplication of transliteration works. Whether this method simplifies the learning of transliterations need further investigation. The problem of access is also indicated by this Academy of Malay Studies lecturer, "To find Malay manuscripts that have never been used by previous students is somehow a problem to the current students. There is a lack of Malay manuscripts resources that are easily available." The feedback indicates that both lecturers and students are finding problems in locating and accessing manuscripts for transliteration assignments.

▪ **Students Signing-up for Philology Course**

Lecturers indicate that there are students especially non-Malay students who do not know how to read Jawi but were taking the "Introduction to philology" course. Lecturers felt sorry for these students and could do little to help since they felt that teaching Jawi is too basic to be taught at the University level. This infers that lecturers have problems when some students signing-up for their course (it is a core course) cannot read Jawi.

▪ **Initiatives to Conserve Manuscripts**

To save and protect old manuscripts needs initiative and budget. One lecturer indicated,

"Like I said earlier, the people from Arts Department need to have the initiative to learn, but I never see that. I can see other people from other Departments like me who are more interested compared to them."

Another remarked, "Like in University Malaya, currently there is no 'special' place to keep the original manuscripts. Manuscripts need to be located in a room with a suitable temperature and people cannot simply enter the room, usually they need to wear mask and gloves in order to protect the manuscripts that are getting older and fragile. There are regulations on this matter but most people are not aware of it".

"Currently, all the manuscripts are located in the main library, but there is no one there to take care of the manuscripts. For me, I can build a room for manuscripts, but I need finances which would not exceed 100 thousand ringgit". These remarks indicate that lecturers believed that there was no initiative to conserve Malay manuscripts. They are aware for the need to protect manuscript collections but the amount mentioned that is required for the conservation work is actually unrealistically low.

▪ **Experts in Manuscript Studies**

One lecturer at the Academy of Malay Studies opined, "In APM, there is no philology expert. There are only experts in manuscript content".

At the Institute of Malay World and Civilization (ATMA), Universiti Kebangsaan Malaysia, there was an initiative to develop a web repository of resources on Malay arts and classical heritage. A lecturer at the Institute informed,

"There is a manuscript unit here, but it is no longer active. I believe that if they are still active, they will do the same thing that you are doing today [referring to the *MyManuskrip* initiative]. Previously, I had documented 40 manuscripts in microfilm which is not available in Malaysia and I digitized them, one of the manuscripts is about the Friday sermon"

At the University of Malaya a lecturer indicated that "At APM [Academy of Malay Studies, University of Malaya], there is a society that is responsible for promoting Malay manuscripts and literary works and they are currently progressing by making plans to protect old manuscripts. Some of lecturers in APM are concern about saving the old manuscripts. On their own initiative, they microfilmed and digitized the manuscripts".

(iii) Technology Use and Acceptance

The initiative of e-philology of Malay manuscripts system by Universiti Kebangsaan Malaysia (UKM) is believed to provide Malay manuscripts resources in future for manuscript studies. Students would no longer have problems in finding manuscripts and the available resources could assist them to produce the best assignment within the time given. Discussions and communications with lecturers and other class member will also be easier. As one lecturer commented,

“Faculty of Technology and Information Science in UKM had developed a system that is supposed to be able to automatically transliterate Jawi script to roman, but the project have failed. If you can do a similar project, it would be a breakthrough”

A lecturer interviewed believed automation projects makes students lazy and learning in an electronic environment is not enough to be a philologist. One lecture expressed his concern about making manuscript copies available on the Internet and argued over the ownership of such manuscripts and also the legality of making manuscripts accessible on the web. He commented,

“Actually, this electronic thing will make people lazy. For philologist, they have to know not only the physical aspects of the manuscripts, but they need to feel and touch the original manuscript. Also, there is no guarantee that all the information in the internet is true.”

(b) Students Following Manuscript Study Course

The data from students were collated from the interview sessions, focus groups and also the observations. The responses are indicated below under sub-sections.

(i) Teaching and Learning Manuscripts Currently Practiced.

From observations made during tutorial classes, the researcher observed that the lecturer would directly start the class by introducing the subject and explaining the meaning of philology. The explanation was delivered without using any supporting material such as slides presentation. The resource used by the lecturer is a reference book and sometimes he wrote down the important terms on the white board. One of the student in the focus group session remarked about this, “Currently, in philology class, there is no syllabus provided by the lecturer in the beginning of the class such as the objectives of the subject and the weekly plan”. When asked about the class supporting material, one of the students said that, “We only use the reference books provided by the lecturer and the lecturer uses only one reference book”. This implies that students in the philology course were very lecturer dependent. Nobody complained directly to their lecturers indicating that although they may not be satisfied they believe that this is the normal method of learning manuscript studies.

(ii) Supporting Resources for Manuscript Studies

▪ Time Allocated to Manuscript Studies

In the tutorial classes every week, students will present the updates on the progress of their assignment. During these sessions each student share and discuss problems faced with their lecturer and peers in class. One student explained,

“The duration of 1 semester to learn Malay manuscript is not enough. Usually we only have time to have discussions with lecturers during the tutorial session which is only 2 hours per week and usually not all students get a chance to present and seek for lecturer’s comments”. Concurring with their lecturers, students also expressed that the time allocated for the course is insufficient.

▪ Resource Support

Another issue students brought up is about the lack of Malay manuscript resources. “There are no specific resources where we can easily locate Malay manuscripts. Besides the main library, we usually get the manuscript from our own collection at home, but we need to show our lecturer first and get his approval before we proceed with our research on that manuscript”

▪ **Initiatives to Learn about Manuscripts**

The students believed that their generation should have more initiative to learn Malay manuscripts in order to understand the need to protect this heritage. One student said, “We are lucky to be in the philology class and got a chance to learn Malay manuscripts. I think it is good to open this subject to all students from any faculties so that at least it helps us learn and know the creative works of our previous generations.”

▪ **Expertise**

In class, students refer problems or bring issues to their lecturer and when asked about other resources, one of them answered, “Currently our main reference is our lecturer. We don’t have connection with other lecturers or expertise”. Another student added, “During the class, the discussion is limited only between students and lecturer. So, everything is based on the lecturer’s knowledge”.

Mainly, lecturer would suggest one reference book for students to refer; students may get other information during the class by jotting down notes from what had been delivered by the lecturer. One student commented, “The reference book that are being used in the class is not enough, it give students only the basic knowledge about Malay manuscripts and philology. Students also need to refer to other resources such as theses”.

(iii) Technology Use and Acceptance

All students indicated being frequent users of the computer and internet, such as the social networking web. One student commented, “When I was involved in the exchange students programme with a student from China, we are connected through a blog and I find it is very helpful for us to work together at anytime and anywhere”. There is no problem for them to accept technologies in their daily activities. One student remarked, “It’s good to have such a repository [proposed by the researcher] on the web where we can share everything related with the subject, so that we do not rely only on the 4 hours time a week to do our research on Malay manuscript”. The students taking the Philology course like most students of their age seems ready to accept and use ICT to communicate and learn the subject.

(c) Researchers

The data from researchers were collated from the interview sessions. Their responses are described below.

(i) Current Practice of Manuscript Research Activity

From the researcher’s view, besides being able to read the Jawi script, it is important to have skills in transliteration as one researcher remarked, “Transliteration is the most important process where the researcher needs to convert the old Jawi script to romanise Malay. It is very important for the researcher to know how to read Jawi script and have the skills in understanding the old Jawi script that is different when compared to the modern Jawi script that are being taught in schools today”.

(ii) Supporting Resources for Manuscript Studies

▪ **Resource Support**

It is clear that some respondents were not aware of other available resources beside the print copies. One researcher commented, “I have never heard about online resources in manuscripts collection before. All this while, I use the research material from books and

thesis that are available in libraries". This is surprising as there are manuscript digital libraries available on the Web.

- **Expert Support**

Researchers were mainly postgraduate students. Their sources of reference are usually lecturers and experts from various universities. One researcher said, "I always keep myself in touch with expertise in my research area from other universities in order to keep myself updated and get information related to my research."

Beside reference books, they also refer to theses as their main research resource, as indicated by one researcher, "Yes, the collection of theses from other researchers is very important as my research resources. I always get it from the faculty library or directly from the owner of the thesis". This indicates the researchers are not information literate in terms of sourcing out manuscript information as versions of Malay manuscripts are available in various libraries in the world. This applies also to Malay manuscript experts who are not confined only to Malaysians.

(iii) Technology Use and Acceptance

Researchers from the Academy of Malay Studies indicated that they do not use computers or the Internet while doing their research. They felt that technology usage is unnecessary. They would use computers only for word processing their chapters, as one researcher remarked, "I seldom use PC in my daily research. I just use it when doing the writing, most of the research sources are in hard copies and I believe that all the researchers in manuscripts studies area do research this same way."

However, when asked about using technologies to support their research, they have no problems in accepting it as a supporting tool. As indicated by one researcher, "Beside my own experience, I also use dictionaries to help me in transliteration. There are quite a number of dictionaries in the market, but so far I think "*Kamus Melayu Klasik*" is the best dictionary for Malay manuscript studies. If this dictionary can be digitized, it will be very helpful."

DISCUSSIONS

The initial findings from interviews, focus group discussions and observations were transcribed, analysed and grouped using the thematic analysis method.

Figure 1 below shows the process and problems in teaching, learning and researching Malay manuscripts highlighted by the three main users; lecturers, students and researchers. The process and problems sometimes overlaps between the users.

Figure 2 on the other hand depicts the proposed framework of online platform that support teaching, learning and researching Malay manuscripts. The framework shows how technology can help solve problems expressed by the Malay manuscript communities. The framework demonstrates how each problem is solved by mapping it to the proposed system which underlines:

- 1) *Teaching, Learning & Research Practiced* – the improvement to current teaching and learning practiced in this context refers to basic processes such as transliteration, annotation and analysis. In the current process of teaching and learning, firstly, users need to locate a Malay manuscript by themselves. In the proposed system, users will use the resources held in *MyManuskrip*. This also refers to the users' feedback about what they need and expect to have in the manuscript studies. It is proposed that *MyManuskrip* digital

library could surrogate copies of original manuscripts on varied subjects for users to utilize in their teaching, learning and research.

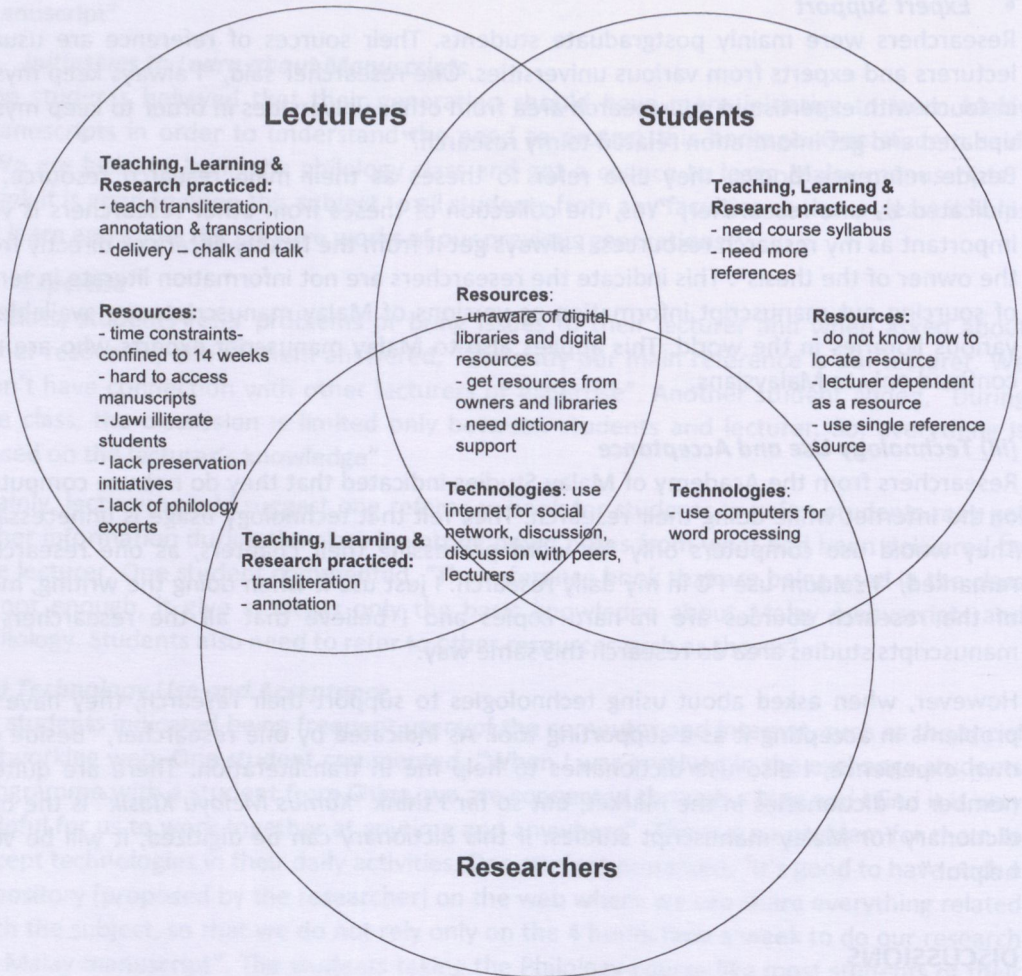


Figure 1: Process and Problems in Teaching, Learning and Researching Malay Manuscripts

- 2) **Resources** – the main issues that have been identified from this study are time constraints, resources and initiatives. In the proposed system, lecturers, students and researchers can assess the digital resources and all facilities provided at any time without any boundaries or borders. It becomes possible for discussions, problem solving, transliterations and annotations to be carried out interactively and collaboratively.
- 3) **Technologies** – This refers to the general views of the users on the new technologies usage today. From the findings, technologies should attract more users to use technological support tools for teaching, learning and researching. This would be a new environment for Malaysian Malay manuscripts communities.

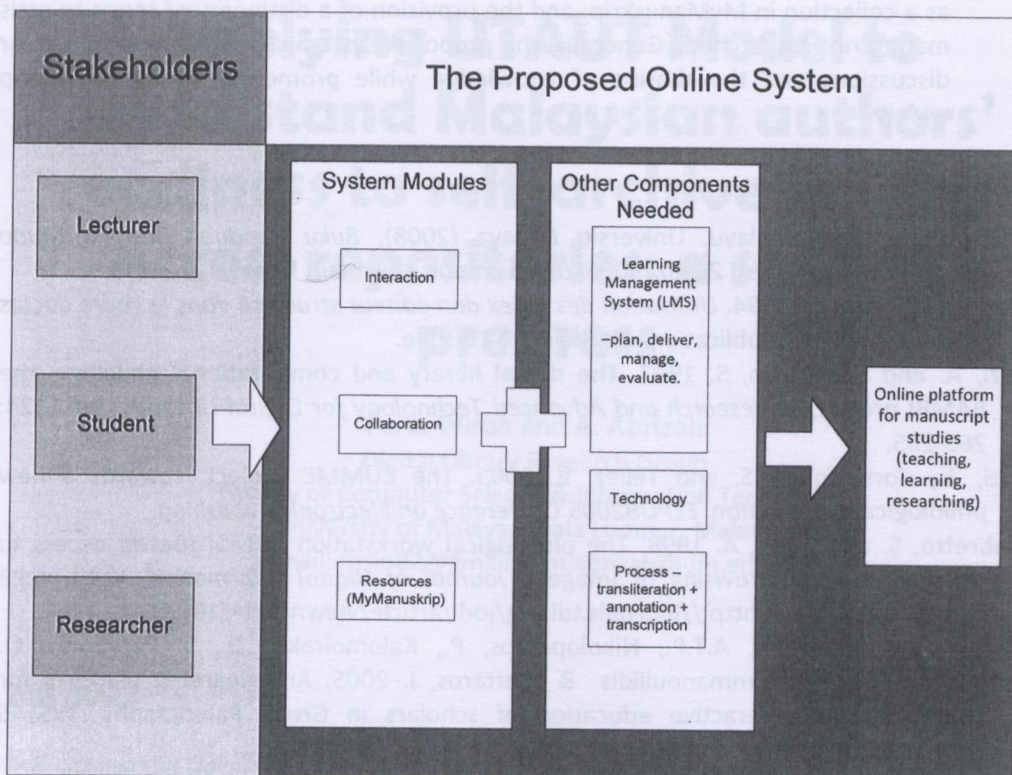


Figure 2: The Proposed Framework of Online Platform to Support Teaching, Learning and Research Activity of Malay Manuscripts

CONCLUSION

In summary, the results indicate that:

- the lecturers mainly uses the “chalk and talk” approach when delivering their course; they refer students to one reference source throughout the course; they indicated that students must be able to read Jawi scripts to follow the course; the main assignment involved transliterating work from old Jawi scripted text into modern romanise Malay; and they would like to have access to more Malay manuscript texts that can be utilised by their students for their assignments.
- The students confirm that their main assignments involved transliterating work; their main source of reference is their lecturer; they are unaware of the existence of a digital library of Malay manuscripts; and are acceptable to accessing online manuscript resources and being able to hold online discussions with their lecturers and peers about their assignments.
- The researchers mainly uses printed text for their research; they use the computers mainly to word-process; and felt that online dictionary on classical Malay would help them in their research.
- The provision of an online platform to support the teaching, learning and research activities together with the use of resources from *MyManuskrip*, a Digital Library of Malay manuscripts, is generally welcomed by philology lecturers, students and researchers at the Academy of Malay Studies, University of Malaya. Specifically, the modules proposed should support transliteration and annotation activities, use current digital manuscript resources from *MyManuskrip*, allow lecturers to upload their syllabus and teaching resources, support interactivity in terms of student-lecturer, student-student discussions; the uploading of transliterated assignments

as a collection in MyManuskrip; and the provision of a dictionary of terms to assist manuscript researchers. Generally, the proposed system should be able to support discussions and the sharing of knowledge while promoting Malay Manuscript widely.

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