

# **The Contribution of mLearning to the Study of Local Culture in the Malaysian University**

## **Context**

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*“Alang-alang menyeluk pekasam. Biar sampai ke pangkal lengan.” Malay proverb.*

*“If at first, the idea is not absurd, then there is no hope for it.” Albert Einstein*



This thesis is concerned with the impact of mobile learning (mLearning) on the study of local culture at Malaysian universities. For convenience, the term Local Cultural Studies (LCS) is given to Humanities subjects related to the teaching and learning of Malay culture, for example: Local History, Local Culture and National Heritage, Malay Wood Craft, Malay Drum, Cooking, Batik Textile, Ceramic, and Local Drama. These subjects are not as popular as Science and Engineering and are often referred to as ‘dying traditional knowledge’ with an uncertain future. They have a lesser degree of significance in modern Malaysian society in achieving a ‘developed country’ status. One motivation for introducing mLearning into LCS subjects is to make them more interesting: the learning activities and the subjects should appear more modern by linking them to the latest technology. The fact that all students own mobile phones in Malaysian universities creates an opportunity to use mLearning for the benefit of LCS. In addition, mLearning could be used to create student-generated content to richer multimedia learning resources as one of the major challenges for LCS is the limited ability of resources. An exploratory preliminary study with managers and content developers within mobile application companies confirmed there were limited local mobile content and little incentive to develop more. A major focus of this thesis was to investigate approaches to overcoming this problem: (1) the development of culturally appropriate user interface design guidelines that could be used to assist developers and academics in the production of local content; and (2) involving students in creating local content in student-generated mLearning activities.

A largely qualitative study focused on gaining an understanding of mLearning’s contributions to the study of local culture from the perspective of academics and students at predominantly Malaysian public universities. The research was designed in two stages. In stage 1, Nielsen’s user interface design guidelines were first adapted to include two cultural design principles based on local Malay cultural content and aesthetic values and then used as a guide to uncover academic and student views on culturally appropriate design during a heuristic evaluation of three mobile applications with a Malay cultural focus. The heuristic evaluation of the mLearning applications also served to raise awareness of mLearning and paved the way for interviews with academics and focus group discussions with students about their pre-existing experiences with mobile technologies and perspectives on mLearning. Interviews and focus group discussions were audio recorded, transcribed, translated, and analysed using a thematic analysis approach. Consequently at Stage 2, student-generated activities using mobile devices were introduced. These included students making videos, taking photographs and sound recording interviews in their LCS subjects using a mix of mobile devices such as mobile phones, laptops and cameras. Then a second round of interviews and focus group discussions was conducted to understand participants’ objectives of mLearning and in particular, mLearning involving student-generated content. This was analysed again using thematic analysis.

The first key finding of the study identified academic and students’ perspectives on culturally appropriate design guidelines related to the usability of mLearning LCS applications. The participants confirmed that suitable local cultural content appropriate to the subject and local aesthetic values were important and could motivate learning. The most important local



cultural aspect was found to be the use of local language, Bahasa Malaysia, or bilingual interfaces. A more complex aspect of interface design was the inclusion of philosophical values relating to Malay and Islamic philosophy. The study also demonstrated that it is inadequate to exclusively emphasise culture. General usability principles were also observed as significant, for instance, consistency, minimalist design, efficiency, flexibility and error management, and should be taken into consideration in designing LCS applications.

Furthermore, the findings identified participants' pre-existing experiences and perspectives of mobile technologies and mLearning. They used mobile phones extensively for personal leisure and interest although students were more advanced than academics in exploring software applications for mobile phones. At university the majority of participants used their mobile phones for communication for educational purposes. However, they did this without being aware that these activities were mLearning-related. They also identified challenges for introducing mLearning: lack of local mLearning content and limited ethical policies to regulate mLearning were of concern for both academics and students.

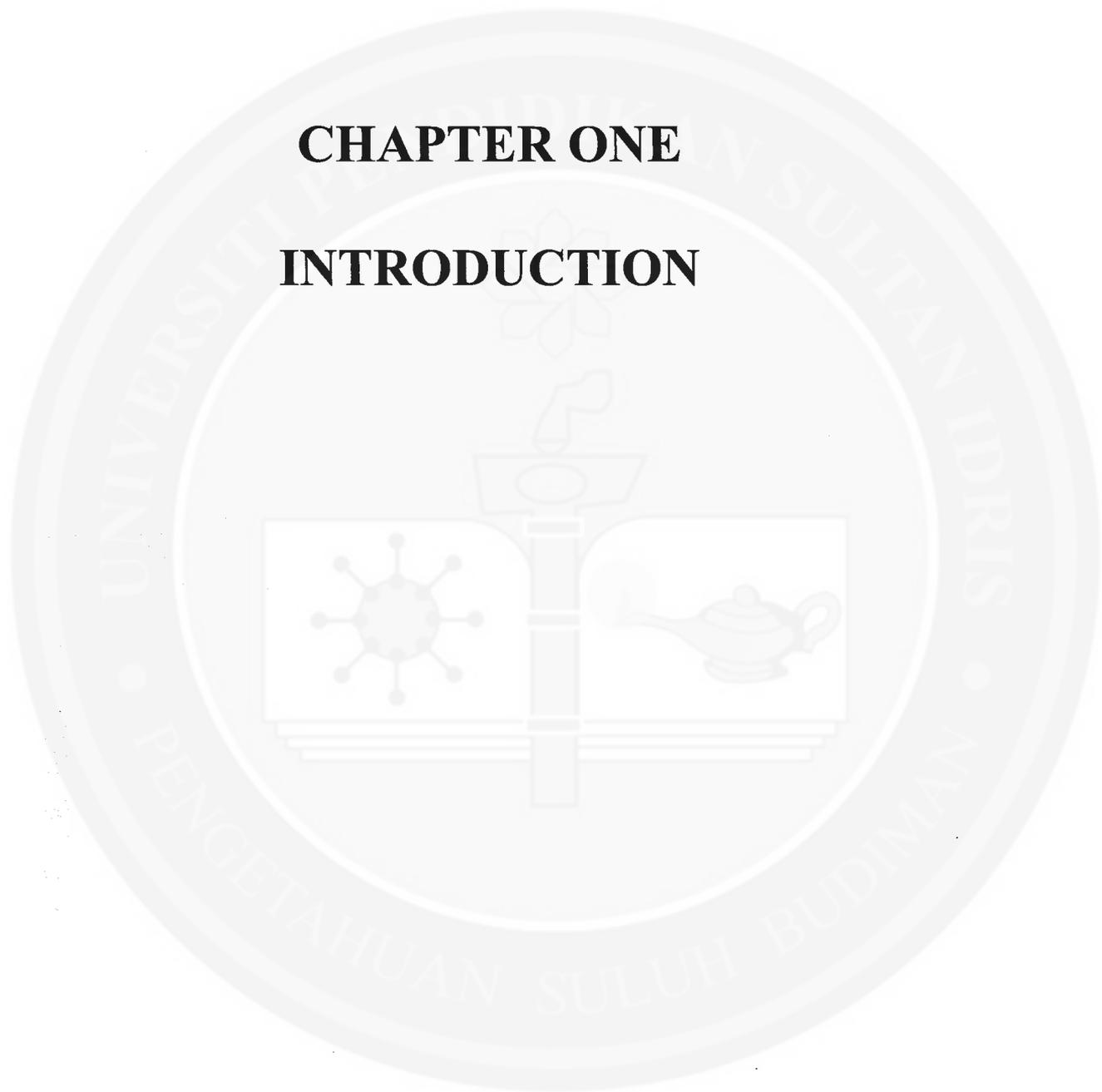
Changes to participants' perspectives on mLearning were observed following the student-rated content activities in Stage 2. Academics were more aware and stated that they were more open to allowing students to use mobile phones for student-generated activities. Students benefited by gaining new multimedia skills and accomplishing better quality assignments using mobile devices. They reported creating, accessing and sharing multimedia content (videos, photos and audio files) both within the classroom and during work at cultural sites. This was found to reduce the challenge of limited local content for subjects. Peer assistance and collaboration from other participants reduced technical issues. Therefore, both academics and students showed more positive attitudes and interest in using mobile devices for facilitating learning in LCS after experiencing student-rated activities.

Contributions of this thesis are therefore:

- Understandings of culturally appropriate design in the Malay context which could assist mobile developers to produce more local content or could be used by academics or students to guide them in creating local content for learning. These understandings might further be extended to other cultural contexts.
- Insights into how academics' and students' established mobile phone practices, as well as their pre-existing uses of mobile devices for educational purposes, could lead to greater awareness and a wider adoption of mLearning to improve LCS subjects.
- A holistic understanding of participants' perspectives on student-generated content in mLearning activities as a way to remedy the lack of content for LCS studies. This could be applied also to other subject areas.

# CHAPTER ONE

## INTRODUCTION



## 1.1 INTRODUCTION

mLearning or mobile learning is becoming prevalent as evolution in education technology is concerned. The emergence of mLearning is evident as described by Sharples (2007, p. 4):

*“Over the past ten years mobile learning has grown from a minor research interest to a set of significant projects in schools, workplaces, museums, cities and rural areas around the world.”*

Similarly, Naismith *et al.* (2004, p. 2) asserted:

*“The world is going mobile. Phones, computers and media devices now fit in our pockets and can connect us to a variety of information sources and enable communication nearly everywhere we go. There is considerable interest in exploiting the almost universal appeal and abundance of these technologies for their educational use.”*

In addition, Dyson & Litchfield (2011) defined mLearning as learning facilitated by mobile technologies. Similarly, Kukulska-Hulme, Traxler & Pettit (2007) defined mLearning as learning with portable or mobile devices such as mobile phones, personal digital assistants (PDAs), and personal media players. This can be extended to different context for an instance at Malaysian universities for the study of local culture.

Users may benefit by the assistance of mLearning for educational activities particularly in the university. Due to the high adoption of mobile phones (Karim *et al.* 2009; Malaysian Communications and Multimedia Commission 2012; So 2012), university students are ready to use mobile phones for learning in Malaysia (Abas, Lim & Woo 2009; Hussin *et al.* 2012; Hussin 2011; Ismail, Idrus & Gunasegaran 2010). However, it is still emerging, and the state of mLearning in Malaysia has great potential. Therefore, in this research, mobile devices are mostly on the use of users mobile phones for mLearning.

The researcher's interest is in exploring mLearning in the Malaysian university context, and in particular the use of mLearning for the study of local culture, that is humanities-related subjects that focus on Malay culture. These subjects are mostly studied by undergraduates who are undertaking a Bachelor of Education degree in universities such as Universiti Pendidikan Sultan Idris (UPSI). These subjects focus on Malay culture for example: Local Culture and National Heritage, History, Malay Wood Craft, Batik Textile, Cooking etc.

This study believes a heuristic evaluation on the mobile applications can lead to a better user interface design guidelines or principles, which can further be used to improve these applications for the study of local culture. Additionally this study states that mLearning can contribute to the learning of local culture in universities in Malaysia. Specifically, the researcher believes that students can enjoy an improved learning experience in their study of local culture through producing student-generated content, such as taking photos, audio-recordings and video-recordings using mobile devices such as their own mobile phones. In addition, mobile applications can assist in providing local content to engage students in learning their subjects, particularly for the study of local culture.

The Introduction begins with some background of the study, which will demonstrate the need for more research in this area. From this, the research questions emerge. The objectives of the research and reasons why the research is significant will then be presented. The research design will show how the research was conducted. The contribution of this research to knowledge in the field of mLearning, specifically in the study of local culture in Malaysia, will be explained. Finally this chapter concludes by presenting an outline of the structure of the thesis.

## 1.2 BACKGROUND: THE STUDY OF MALAY CULTURE AND MLEARNING

This thesis focuses on the study of local culture in humanities-related subjects that focus on Malay culture that could impact users such as academics and students at Malaysian universities with the advent of mLearning. Meanwhile the Malaysian National Cultural Policy has highlighted the Malay culture as the indigenous culture of Malaysia (JKKN 2013). Malay culture is the dominant culture of practise and communication, especially within the Malaysian public university system. Despite this, these humanities-related subjects are not given priority in Malaysian universities, compared to technology or science subjects. Therefore this study addressed Malaysian academics' and students' perspectives which assisted the study of local culture with the used of mLearning.

In addition, the teaching of local cultural studies has not kept pace with technology developments. For example, recent mLearning initiatives are rarely implemented in this domain. The advancements in mLearning, for example the use of mobile phones for learning, may assist students in studying local Malay culture and make this area of study more engaging for students. Introducing up-to-date mobile technologies into their learning could enhance the interest level of what might otherwise be viewed as dull subject matter which is irrelevant to the current technological times.

This research was initiated to investigate university academics' and students' perspectives on mLearning contributions for the study of local culture in Malaysia. It took place in the context of students enrolled in mainly humanities courses, who one would reasonably expect to be more aware of the importance of local culture. At present, students from Malaysian public universities are largely of the Malay ethnic group and profess Islam as their religion.

In addition, a preliminary study was conducted with mobile developers and Chief Executive Officers (CEOs) of mobile companies to assess the availability of content to support mLearning of local culture. Despite the emergence of mobile devices as tools for learning, research in this area is limited. Moreover, most of the previous studies of

mLearning in Malaysia have focused on science, technology, long distance learning, engineering, English as a Second Language (Abas, Lim & Woo 2009; DeWitt & Siraj 2009; Ismail, Idrus & Gunasegaran 2010; Mahamad, Ibrahim & Taib 2010; Mohamad & Woollard 2012; Noorasura & Sazilah 2011). Research of local culture subjects and mLearning is limited. Therefore, this study as to what mLearning can offer to the study of local culture in the universities in Malaysia will make a valuable contribution to the literature.

### **1.3 MOTIVATION OF THE RESEARCH**

This study was initiated by the researcher predominantly to improve the study of local culture at Malaysian public universities with the assistance of mLearning. This section elaborates further this research motivation, why Local Cultural Studies (LCS) had been selected, what are culturally appropriate guidelines and what this research does not represent.

#### **1.3.1 Main Motivation of this Study**

The main motivation for this study emerged from the researcher's perspective as a Malay educator at a Malaysian public university to improve the study of local culture with the use of mLearning. Due to limited literature in this area, this study elucidates on a culturally appropriate design to be embedded in mobile local cultural content for the study of local culture. One of the major problems that motivated this study is the lack of local content for mLearning. The problems are further described at Section 1.4. In addition this research explores and presents the perspectives firsthand from academics and students in mLearning in relation to the study of local culture. It is also the researcher's intention to propose a pragmatic approach to maximise the students' own mobile device activities for mLearning in generating local content by the students. Finally, this research will propose new perspectives on the mLearning contributions to the study of local culture in Malaysia.

### **1.3.2 Why Local Cultural Studies (LCS)?**

For convenience, the term Local Cultural Studies (LCS) is given to Humanities subjects related to the teaching and learning of Malay culture, for example: Local History, Local Culture and National Heritage, Malay Wood Craft, Malay Drum, Cooking, Batik Textile, Ceramic, and Local Drama. These subjects of the study of local culture or LCS are not as popular as the Information Technology and Engineering subjects. They are considered ‘dying subjects’ with an uncertain future. For example their enrolments are declining. Likewise introducing the latest technologies to assist learning in the subjects was thought to be a good way of transforming the learning and teaching, making it more active and enriched. Therefore those involved in engaging students who are interested in the technologies of mobile devices will be more up to date and more modern.

### **1.3.3 What are Culturally Appropriate Guidelines?**

The researcher’s perspective on culturally appropriate guidelines follows aesthetic values and content of the culture, in this case Malay culture. Young (2008) stated the significance of culturally appropriate guidelines to improve usability of the design of the applications. This study extends the idea of culturally appropriate design guidelines to improve the usability of user interfaces for mobile applications, in the study of local culture in the Malaysian context in public universities. Further illustrations and justifications are presented at Chapter Three in Section 3.3.1, defining the attributes of these principles for heuristic evaluations for the mobile applications.

## **1.4 STATEMENT OF THE RESEARCH PROBLEMS AND RESEARCH QUESTIONS**

This section describes the underpinning issues, which this study will address and state the associated research questions to which the researcher will seek answers and illustrate the problems that led to this study. The research begins with broader questions, which can be elaborated throughout the research development (Mertens 2010).

## 1.4.1 Lack of User Interface Design Guidelines for Mobile Applications for Use in Malaysia

Kukulska-Hulme (2008) stressed that usability aspects are ignored in mobile learning research. Usability may include culturally appropriate design guidelines or principles of the user interface of applications used in mLearning. Young (2008) highlights that one of the important challenges for using mobile learning comes from the lack of guidelines for acknowledging local culture in Information Communication Technology (ICT) design. The inclusion of cultural differences in the design of user interfaces is for the benefit of local users or stakeholders. Similarly, Nielsen (1990, p. 39) emphasises usability in the perspective of local user interface design guidelines:

*“The argument is that an interface which is used in another country than the one where it was designed is a new interface. One cannot trust the original usability work on the user interface to necessarily have produced a design which will be equally usable around the world.”*

This applies to the design guidelines of user interfaces for mobile applications (“apps”) for mLearning in the Malaysian context. The embedding of local design cultural features has been largely overlooked in Malaysia. The features can consist of Malay and Islamic values (Mastor, Jin & Cooper 2000) which are appropriate for the Malaysian students. In fact, there are no proper guidelines for user interface design for mobile local cultural content in mLearning. This is particularly important for students in the study of local culture. It is reported that local cultural design elements embedded in lessons can motivate students in their learning (Abdullah & Chandran 2009) for mobile applications (Bujang & Riaz 2012; Diah et al. 2011). In addition the research purpose is to understand the culturally appropriate design in the Malay context which could be used by mobile developers to produce more local content or could be used by academics and students to guide them in creating local content for learning for LCS studies. Thus this study also aims to answer the issue of the lack of user interface design guidelines for culturally appropriate design guidelines of applications for mLearning.

This corresponds with Research Question 1 (RQ1).

### *Research Question 1*

What are culturally appropriate user interface design guidelines that can inform the design of mobile applications for the study of local culture in Malaysia?

## **1.4.2 Lack of Understanding of Academics' and Students' Perspectives on mLearning for Local Cultural Studies (LCS)**

Kukulska-Hulme et al. (2009) pointed out that mLearning research should cover identifying factors contributing to the learning environment from the human or users' perspectives. mLearning contribution factors in this study will be identified from the academics' and students' experiences using mobile devices. In addition, Vavoula et al. (2004) suggested comprehensive pedagogical guidelines for assisting users, such as academics and policy makers in utilising mLearning. It is also vital to understand the impact of the information technologies (Myers & Avison 2002) with the advent of mLearning to the academics and students from this research. According to Sharples et al. (2007, p. 236):

*“Thus, we make distinctions between elements of experience (hot/cold, friendly/unfriendly, freedom/authority) which we label, explore and discuss with ourselves, as we refine our knowledge, and with others, as we move towards agreed understandings by shared discovery and discussion.”*

As stated previously, there is a deficit of understanding mLearning in the study of local culture in Malaysian institutions of higher learning from the students and academics. In order to remedy this situation, this research explores mLearning from the perspectives of academics and students engaged in local cultural studies. Similarly, the perspectives of the academics and students must be acknowledged with regards to mLearning (Ng & Nicholas 2012). The investigation purposes are to understand the established practices of the academics and students in using mobile devices whether for personal daily use or for learning particularly in LCS studies; potentials, benefits and challenges. This in-

depth assessment is for better mLearning awareness for a wider adoption of mLearning types and activities to improve LCS studies. Therefore, this research will look into the established practices of the academics and students using mobile devices for the study of local culture in Malaysian institutions of higher learning.

This corresponds with Research Question 2 (RQ2).

#### *Research Question 2*

What are the academics' and students' perspectives of mLearning for the study of local culture?

### **1.4.3 Limited Local Content for mLearning**

As mLearning is fairly new in Malaysia, it has also been underutilised for the study of local culture that are humanities-related subjects. In fact, there is a lack of learning activities for students using mobile phones for these subjects in Malaysia. Local content plays an important role as a resource for the study of local culture. There is a concern about the lack of digital local content or limited local content for mobile devices in Malaysia (Bernama 2010; Lim 2005). In addition, Ishak & Firdaus (2010) suggested that content creators to produce more local digital mobile content, due to its lack of availability in Malaysia. This could be applied in understanding participants' perspectives for the student generated content as an approach to remedy the challenge of lack of local content particularly for LCS studies. Hence, this study aims to address the issue of lack of local content for mLearning by investigating whether local cultural studies students can create mobile content during mLearning activities.

This corresponds with Research Question 3 (RQ3).

#### *Research Question 3*

How can mLearning assist students in generating content for the study of local culture?

Therefore, this study addresses the needs for uptake at current issues in mLearning of what it can contribute to the study of local culture in the Malaysian context.

## 1.5 SCOPE AND KEY ASSUMPTIONS

This research acknowledges other races and cultural contributions in Malaysia. Malaysia is a multiracial country and other ethnics and races have contributed in the development of the country. This research focuses on the Malaysian Institutions of Higher Learning for humanities-related subjects that focus on Malay culture. In addition the National Cultural policy identity focuses on the significance of Malay culture as the base or dominant culture. The Islamic religion has an important role in shaping the nation and elements from other cultures, which may be suitable to be adapted as part of the national culture in order to unify Malaysia (Mastor, Jin & Cooper 2000).

Some academics and students are aware of the educational environment on mobile devices as they have accessed available social media sites, such as YouTube educational sites, open course wares and Open Educational Resources (OERs). This would mean that the participant is assuming some degree of familiarity with the notion of educational content via mobile devices.

In addition, this study focuses on the following research questions with the following assumptions:

RQ1- The main identifications of culturally appropriate design guidelines are from the heuristic evaluation with the local cultural content mobile applications in order to identify issues for a better use of the user interface design.

RQ2- Academics' and students' perspectives are vital to capture as they are the ones impacted firsthand pre-existing experiences using mobile devices such as mobile phones to the educational environment.

RQ3- Recruited students mostly have average ICT knowledge and are capable of creating content using their own mobile phones.

## 1.6 SIGNIFICANCE OF THE RESEARCH

The significance of this research elucidates what is the novelty of this research, what is the impact and who benefits. The “impact” is the contributions of mLearning for the study of local culture that this research attempts to reveal the academics and students perspectives at the Malaysian universities. This is demonstrated from the themes developed in answering the research questions.

Notwithstanding the establishment of user interface design guidelines for mobile applications such as Nielsen & Budiu (2012), there is limited research on user interface that specify local culture (Reinecke & Bernstein 2011; Young 2008). In the Malaysian context there is still a deficit in research and understanding the culturally appropriate design guidelines for the mobile applications of user interface. The research reported in this thesis identifies localised attributes for the consideration of interface design of mobile applications for learning. The embedding of elements from Malay culture into mLearning applications and the following of culturally design guidelines could benefit mobile developers working in the Malaysian context. This research will benefit the mobile developers in following the appropriate design guidelines, which resulted from this study in the Malaysian context. Likewise academics and students could benefit from having more suitable applications for LCS and can be extended to other subjects as well.

The mLearning phenomenon is epidemic all around the globe (Sharpley et al. 2007). However, the researcher argues that humanities-related subjects for LCS such as History, Local Culture and National Heritage, Malay Woodcraft, Cooking etc. have been overlooked compared to technology and engineering subjects in the advent of mLearning in the Malaysian context. Likewise there are limited mLearning researches available for obtaining the academics’ and students’ perspectives in the study of local culture at the institutions of higher learning for the Malaysian context. This research can

add value in understanding mLearning contributions for the academics and students in the study of local culture in Malaysian universities.

There is lack of local content for mobile applications in Malaysia (Bernama 2010; Lim 2005). In addition, there is a lack of local content as the source of mLearning in the study of local culture. MLearning can be a source of generating mLearning content (Kukulska-Hulme, Traxler & Pettit 2007) and to address the insufficiency of local content. However student-generated content for mLearning in the study of local cultural subjects are novel in the Malaysian context. From the researcher's perspective and observation, there is a lack of awareness from the academics and students of the potential, which leads to limited use of mobile devices, such as mobile phones, for creating local content for LCS in Malaysia. Consequently this study describes the affordances of mLearning for institutions of higher learning students in creating local content using mobile phones for the study of local culture in Malaysia. This research will benefit the academics and students in a new approach to use mobile phones for creating content for the study of local culture in a Malaysian setting.

## **1.7 RESEARCH DESIGN**

Here is an overview of how the research was designed and is presented in order to answer the research questions.

### **Literature Review**

The study begins with the review of literature of mLearning. This review aims to identify the gap in the study. Firstly the review covers the Malaysian cultural context and the significance of Malay culture as the focus of this thesis for what mLearning can contribute to the study of local culture. The literature also described the Information Communication Technologies Development in Malaysia. This review includes the development of digital content for mobile phones and the challenges of lack of local