E-GOVERNMENT IN THAILAND: A CRITICAL EVALUATION OF FUNCTIONALITIES, ACCESSIBILITIES AND USABILITY OF THE MINISTRY OF EDUCATION WEBSITES

A study submitted in partial fulfillment of the requirements for the degree of Master of Arts in Librarianship

at

THE UNIVERSITY OF SHEFFIELD

by

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September 2012
ACKNOWLEDGEMENT

I would like to sincerely express my gratitude to Mr. Alastair Allan, my dissertation supervisor. His kindness, valuable comments, patience and encouragement made this dissertation possible.

My special thanks are also extended to all my classmates in this MA Librarianship program for their friendship and support during the time of my study at the University of Sheffield.

Lastly, I would like to convey my sincerest appreciation to my beloved family and friends for their love, warmth and encouragement.
ABSTRACT

**Background.** Thai government is trying to develop information systems for Thai citizens in order to improve services provided to the citizens. E-government is one of the significant mechanisms that Thai government intends to improve as well as to help bridging ‘the digital divide’. Therefore, the investigation, evaluation and observation in e-Government website in Thailand can assist Thai government to accelerate the implementation of e-Government websites so as to best meet the needs of its citizens.

**Aims.** This research aims to investigate, evaluate and observe the main criteria of e-Government website in Thailand. The focus of this research is to examine the websites of Thai Ministry of Education, Office of Permanent Secretary for Education, Office of the National Education Council, Office of the Higher Education Commission and Office of Vocational Education Commission.

**Methods.** This research is carried out by reviewing the relevant literature relating to e-Government together with education in Thailand. The research methodology applied in this study is observation. The selected websites were investigated, evaluated and observed by using the key criteria derived from Cullen and Houghton (2000). A conceptual framework is also established to enable researcher have a specific focus.

**Results.** The main findings shows that the key components for the effectiveness of e-Government websites in Thailand need to be implemented in the area of education are orientation to website or usability, currency and authority, bibliographic control, services, privacy, quality of links, feedback mechanisms, accessibility, design and
navigability. The key criteria that the websites still lacked of are privacy, quality of links, feedback mechanisms, accessibility and design.

**Conclusions.** This research summarised by providing recommendations for further improvement of Thai e-Government website as well as for further study. It highlights Thai governmental organisation should therefore consider which key criteria they still need to develop to attain the effectiveness of e-Government website to best meet the need of Thai citizens.
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CHAPTER 1
INTRODUCTION

1.0 Introduction and context

1.0.1 Rationale

As a developing country, the Thai government is attempting to improve its information systems for its citizens as part of its long-term development program. The government has tried to implement new technologies so as to improve its service for all Thai people, not only in the capital city Bangkok but also in other provinces all over Thailand. E-Government is one of the key mechanisms through which the Thai aims to bridge the ‘digital divide’ gap between Bangkok and other more rural provinces (Fang, 2002, p.20). In this way, it hopes to provide equal and effective service to all Thai people.

In the past, the Thai government has launched many programs to provide better services to all Thai people. One of the significant programs is implementing e-Government to its departments and agencies. The stage analysis of implementing e-Government requires exhaustive process. Those consists of web presence, interaction, transaction and integration according to Mofleh and Wanous (2009, p.133). They propose that the stage analysis is a scope that will help to indicate at which stage of service a government website intends to deliver to users. This analysis will help to reflect the improvement of the e-Government project across government departments and agencies. Additionally, there has been much discussion concerning the stage analysis. Mofleh and Wanous (2009, p.132) cited from Layne and Lee (2001) Moon (2002) Siau and Long (2005) stress the point that the stage analysis consists of “generic e-Government models that are categorised into different stages of service delivery (Mofleh and Wanous, 2009, p.132)”. In order to implement its
objectives, Thai e-Government system will be assessed for its accessibility, usability, navigability, content management and design (Cullen and Houghton, 2000, p.247) whether those are actually effective for Thai citizens. This research will be conducted in order to evaluate whether Thai government websites are effective by analyzing the websites from the Ministry of Education. Additionally, the examples from other governmental organizations relevant to education in Thailand will be applied to illustrate whether those websites conform to the same standard of national government websites. It is expected that the results of this study will be beneficial to improve public services especially in terms of education for all Thai people.

In regard to the administrative and organisational structures of Thai Education system, Ministry of Education in Thailand consists of 7 main organisations which are Office of Minister, Office of the Internal Audit, Office of the Permanent Secretary, Office of the Education Council, Office of the Basic Education Commission, Office of the Higher Education Commission and Office of the Vocational Education Commission. The new administrative and organisational structures of Ministry of Education in Thailand have been implemented since 2002. The attainment of new structure is to consolidate the education planning at the central level as well as to decentralise of administrative responsibilities to local level (Office of Education Council, 2007). The procedure of reformation of the Thai Education System contributed to the establishment of 175 Education Service Areas (ESA) in 2003. In 2008, the rate has grown to 185 (Office of Education Council, 2007).

This research will therefore investigate e-Government of Thailand in relation to Ministry of Education by using the evaluation criteria of government website according to Cullen and Houghton (2000, p.247)’s research. They offer a useful
assessment criteria of government website as well as it has been applied in many researches. The evaluation criteria are divided into two major categories that are information content and ease of use. The major criteria also consist of sub-categories that are elaborated as follows (Cullen and Houghton, 2000, p.247):

1. **Information content**
   - Orientation to Website/ Usability
   - Currency and authority
   - Bibliographic control
   - Services
   - Privacy

2. **Ease of use**
   - Quality of links
   - Feedback mechanisms
   - Accessibility
   - Design
   - Navigability

**1.0.2 Identification of problems**

The motivation for conducting this research is driven by several factors. Firstly, I have had considerable experience in using The Ministry of Education websites and found that they were difficult to navigate; had poorly designed links; suffered poor organization structure and there were problems downloading important documents. Moreover, there were considerable discrepancies between the English language and Thai language web pages. Consequently, there have been many complaints from students, educational staff, users and practitioners regarding the quality of these websites. Therefore, one of the main aims of this study is to provide
and recommend possible improvements and develop the websites as effective and efficient portals of information. It is thus argued that it is crucial to provide a better service of e-Government to Thai citizens.

1.0.3 Conceptual framework

This research was conceptual from the identification of problems that aim to provide the motivation to conduct this research. The conceptual framework was established in order to explain the factors that will be analysed. This will be beneficial to answer the questions of the research. By providing the conceptual framework, it will contribute to have a clearer guideline as well as to avoid overloaded and unnecessary data (Miles and Huberman, 1994).

Therefore, this research will highlight on the conceptual framework according to the flow chart below so that the research will be framed only the established framework. The following chart is to present the key evaluation criteria that will be applied to assess websites of Ministry of Education in Thailand and other relevant organisations.
Figure 1: Conceptual framework of the research

- Information Content
  - Usability
  - Currency & authority
  - Bibliographic control
  - Services
  - Privacy

- Ease of Use
  - Quality of links
  - Feedback mechanisms
  - Accessibility
  - Design
  - Navigability

1. Website of Ministry of Education in Thailand
2. Website of Office of Permanent Secretary for Education
3. Website of Office of the National Education Council
4. Website of Office of the Higher Education Commission
5. Website of Office of Vocational Education Commission
1.0.4 Research questions

This research is intended to answer the following research questions;

- How best can the website of Ministry of Education in Thailand meet the key criteria in terms of usability, currency and authority, bibliographic control, services, privacy, quality of links, feedback mechanisms, accessibility, design and navigability?
- How best can the websites of Office of Permanent Secretary for Education, Office of the National Education Council, Office of the Higher Education Commission and Office of Vocational Education Commission meet the key criteria in terms of usability, currency and authority, bibliographic control, services, privacy, quality of links, feedback mechanisms, accessibility, design and navigability?
- What are the significant components for the effectiveness of Thai government websites need to be implemented in the area of education?

1.0.5 Hypotheses

This research addresses the following hypotheses;

- The significant components for the effectiveness of Thai government websites need to be implemented in the area of education consist of usability, currency and authority, bibliographic control, services, privacy, quality of links, feedback mechanisms, accessibility, design and navigability.
- Having the national standard of website will help to improve better services through the website of Ministry of Education.
1.1 Research aims and objectives

1.1.1 Research aims

The aims of this proposed research is to critically evaluate three main areas of website content and effective design, namely, levels of accessibility, functionality and usability. The focus of the research is the current Thai Ministry of Education websites. At present, there have been many changes in the structure and administration of education in Thailand. As a developing country, improving education at all levels is a political priority. Education is thus considered a key mechanism in terms of enhancing the overall quality of education.

1.1.2 Research objectives

- To examine Ministry of Education Websites in Thailand by using key criteria to assess the usability, currency and authority, bibliographic control, services, privacy, quality of links, feedback mechanisms, accessibility, design and navigability
- To investigate websites of Office of Permanent Secretary for Education, Office of the National Education Council, Office of the Higher Education Commission in Thailand and Office of Vocational Education Commission whether they meet the key criteria in terms of usability, currency and authority, bibliographic control, services, privacy, quality of links, feedback mechanisms, accessibility, design and navigability
- To identify significant components for the effectiveness of Thai government websites need to be implemented in the area of education
2.0 Introduction

This chapter intends to review the literature relating to e-Government. It aims to provide general background of e-Government in relations to definition, importance, types, advantages and disadvantages. The general background of Education in Thailand is also presented. The literatures relevant to evaluation criteria of government website as well as e-Government implementation are reviewed. The review of the literature relevant to e-Government will be applied to this study so that it will enable researcher to gain knowledge properly prior to analysis.

2.1 The definition of e-Government

In the current literature, the majority of scholars tend to provide a range of definitions of e-Government. Those scholars attempt to generalize and explain the meaning of e-Government in various ways. Kaylor, Deshazo and Van Eck (2001) offer a useful definition of e-Government that e-Government is implemented so as to assist government to communicate with their citizen by utilizing the Internet. E-Government is therefore the important tool that the government aims to apply in order to disseminate government information through the website. It is evident that four aspects regarding e-Government are information provision; the changing in web publishing; the creation of cross-departmental electronic media for government and the two-way document communication. Additionally, Rose (2005, p.13) proposes that “e-governance goes far beyond the mere supply of information: it is also about using IT to deliver services on line.” GB Central IT Unit (2000, p.5) constructs a
coherent definition that “e-Government is so that the government try to apply in order to serve public in the information age.”

Further evidence can also be found in other studies relating to the definition of e-Government. Of particular relevance to this study is the work of Margetts (2006, p.250), the definition of e-Government is proposed that “government which uses information technology internally and in its interactions with the outside world.” Additionally, Silcock (2001, p.88) defines that “e-Government is the use of technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees.” Similarly, Gunter (2006, p.362) points out that “Electronic governance comprises the use of modern ICTs to deliver public services to citizens and businesses”. He also proposes that “E-government is designed to facilitate a more joined-up style of government. This means enhanced communication links, harmonised organisational practices and partnerships between different layers of government ...(Gunter, 2006, p.362)”.

2.2 The importance of e-Government in Thailand

E-Government is considered a very effective mechanism that can provide a better service to citizens (The Working Group, 2002; Chircu and Lee, 2005). This is because the website is more widely used. Many governments in developed countries have been trying to develop and improve their service by using website which everyone can easily access with merely the Internet connection. E-Government can be implemented so as to facilitate government to disseminate a wide range of services directly to their citizens. The citizens only need the Internet connection to retrieve relevant information and services such as finding the general information about schools for their children, finding information about travelling, paying tax
online, and obtaining government application forms. Many developing countries also have been trying to adopt e-Government in order to assist them in providing better services to their citizens.

Thailand has already implemented e-Government in order to provide a better service to Thai citizens. However, Thailand still faces problems due to its ‘digital divide’ because of the gap of Internet access between capital city and countryside. Thai government has been trying to implement many schemes to tackle that problem as well as an improved service. In order to enhance e-Government, the evaluation and assessment of government websites is therefore necessary in order to realize the problems from utilizing the government services through websites. Thai government can also gain more insight how to develop a better websites for their citizens accordingly.

2.3 The types of e-Government

In the literature review, the most relevant perspectives tend to highlight the types of e-Government. Fang (2002, p.7)’s viewpoint is well argued and convincing in terms of the types of e-Government. He classifies the types of e-Government into five main types, for example:

2.3.1 Government-to-Citizen (G2C) and Citizen-to-Government (C2G)

This type means that the government provides their services via the Internet, in order to offer information and communications delivered to their citizen.

Citizen-to-Government (C2G) refers to the exchanging of information, communication and transactions between government and citizens.

2.3.2 Government-to-Business (G2B) and Business -to-Government (B2G)

This type of e-Government refers to the relationship between government and
business sectors. In other words, the government aims to provide the services to business sectors such as e-transactions, e-procurement and an electronic marketplace. G2B also covers government procurement tenders by using the Internet in order to exchange of information and commodities.

Business-to-Government (B2G) refers to the relationship between business and government relating to government purchases such as e-transactions, e-procurement and an electronic marketplace.

2.3.3 Government-to-Employee (G2E)

G2E aims to assist the government in terms of managing the civil service as well as internal communication among governmental employees. G2E also intends to provide the service in relation to the applications of e-career that refers to the use of website to provide the services relating to job applications.

2.3.4 Government-to-Government (G2G)

G2G intends to provide service regarding cooperation and communication online between governments from different countries or between central and local government. The service is bases on mega database. G2G also covers internal exchanging information and commodities.

2.3.5 Government-to-Non-profit (G2N) and Non-profit-to-Government (N2G)

G2N means that “the government provides their service of information and communication to nonprofit organizations, political parties and social organizations, Legislature (Fang, 2002, p.7).”

Non-profit-to-Government (N2G) refers to the exchanging in information and communication between government and nonprofit organizations.
2.4 The advantages and disadvantages of e-Government

The advantages and disadvantages of e-Government have been much discussed. In this respect, Evans and Yen (2005, p.360) makes a valid point, they propose that e-Government can have both advantages and disadvantages:

2.4.1 The advantages of e-Government

One of the advantages of e-Government is that it will enhance customer service as well as reduce costs because government can merely invest by publishing websites to provide services to their citizens. Additionally, it will help government to circulate information to their citizens. Another advantage is that it will help decision makers to provide better services to citizens. Government agencies will also gain the benefit in terms of centralization of decision-making as well as cost reduction. As a result, the centralization will eradicate ineffective activities.

2.4.2 The disadvantages of e-Government

Even though e-Government provide many advantages as stated, it could be argued that e-Government also has disadvantages as concerned by some people who agree that some drawbacks are occurred due to applying e-Government. One of the drawbacks is for example some people cannot access to the Internet because of ineffectiveness of ICT infrastructure. Therefore, those people cannot obtain the services that government attempts to provide through websites.

2.5 Education in Thailand

2.5.1 The Thai Education System

According to Ministry of Education (2007, p.2), the Thai Education system comprises of 12 year free basic education. It is divided into 6 years of “Prathom” (primary education, P1 to P6) and 6 years of “Mattayom” (secondary education, M1
to M6). The children who are 6 years old require the enrolment with the basic education system. The current Thai Education system results from the reformation of the 1999 National Education Act. It established the new organisational structures as well as supported the administrative decentralisation. Additionally, the Act also promoted the teaching with innovative learner-centred practices. The Thai education system (Figure 2) consists of 9 years of compulsory education, including the free basic education with 12 years. This is guaranteed by the Constitution.

Figure 2: The Thai Education System

![THE THAI EDUCATION SYSTEM](image)

2.5.2 Administrative and organisational structures of the Thai education system

According to Office of the Education Council (2007), the National Education Act 1999 led to the changes in the Thai Education System. The structure of management and administration therefore was revised to benefit the teaching and learning in Thailand. The key change is to consolidate of education planning at the central level as well as to decentralise the administrative responsibilities to local level (Office of Education Council, 2007, p. 5).

Figure 3: The Administrative Structure of Education in Thailand

2.5.3 The importance of Ministry of Education in Thailand

Ministry of Education in Thailand aims to provide educational services to Thai citizens equally. The main purpose is to improve quality of life in terms or developing the educational policy and initiating educational projects so that Thai citizen can obtain a better quality of education that will help them have a better quality of life. The purpose is only one direction that to serve Thai citizens in terms of education until present (Thai Ministry of Education, 2012). Therefore, using e-Government is another means that organisations have tried to implement it so as to yield a better service as well as to disseminate their information to the citizens more widely.

2.6 The evaluation criteria of government website

Cullen and Houghton (2000)’s research offer a useful assessment criteria of government website. The evaluation criteria are divided into two major categories that are information content and ease of use. The major criteria also consist of sub-categories (Cullen and Houghton, 2000, p.247):

2.6.1 Information content

- Orientation to Website/Usability

This criteria is to evaluate whether the website provides a clear purpose. It also includes overview of website, statement clearly provided, purpose of the website and target audience (Cullen and Houghton, 2000, p.259). In addition, Baker (2004) also proposes that the usability of e-government websites is as “a qualitative measure of the relative ease with which a novice user interacts with an e-government website to accomplish the user’s goal (Baker, 2004, p.4)” Accordingly, it is evident that usability means
the method applied in order to evaluate the design whether it is suitable for the abilities and skills of e-government users. This is to examine whether the websites is easy for the users to be able to use the available services from the websites.

- Currency and authority

Currency is applied so as to assess timeliness and updated information on the website. Cullen and Houghton (2000, p.259)’s findings stress the point that “the contact person addressed as well as the updated date appeared at the bottom of the webpage are needed”. It is suggested that the website that meet this criteria should have no “under construction notices” (Cullen and Houghton, 2000, p.259). In addition, currency also means that how current the information is, when the information has been created and published as well as when the web pages have been updated.

Further evidence can also be found in other studies relating to authority. Of particular relevance to this study is the work of University of Maryland (2011). They conclude that authority is the criteria to assess the author who is responsible for publishing the webpage as well as whether the individual or organisations have the credibility and reliability. It is also suggested that the contact address should be mentioned (Cullen and Houghton, 2000, p.259). Additionally, references of the information on the web page should be cited accurately as well as the sources published should be reliable as well.

Moreover, Cullen and Houghton (2000, p.259) stress the point that authority covers the credibility of the author of the websites as well as the credibility of the person who is responsible for publishing the information.
The credentials and the affiliation of individuals and organisations are also included. A contact address on the page, the quotation of the sources of the information on the web pages, the citation of reliability of printed evidence where further information can be searched for and the credibility of the sources that has been used.

- **Bibliographic control**

  Cullen and Houghton (2000, p.259) also propose that bibliographic control means that the website cite author, publication date, publisher accurately and consistently.

- **Services**

  Cullen and Houghton (2000, p.260) suggests that services should be open to every user without fees as well as being operational. Links should also be effective with no dead links. Downloading pages should be effective. Additionally, it is necessary that navigation options should be distinct at the top of the pages.

  In addition, it is evident that there can be a range of other relevant factors which can be used to evaluate services such as purchase or e-mail help, opened services to all and no fee required, operational advertisement, statement on users’ privacy rights, information about users’ rights to sell on the information on the site enabling encrypted information exchange with the site, robust links, information about the links, pages download with effective speed, existing feedback mechanisms (Cullen and Houghton, 2000, p.260).

- **Privacy**

  Privacy right of users should be protected appropriately. Website should also provide clear policy regarding privacy to users (Cullen and
Houghton, 2000). In addition, privacy is defined as the use of personal information and a social consideration (Langenderfer and Miyazaki, 2009; Laudon and Laudon, 2009; LaRose and Rifon, 2007; Culnan, 2000 as cited in Nils Hittech et al., 2011). Therefore, it is general accepted that discussion of the implications for citizens of e-government is significant. Nils Hittech et al. (2011)’s findings also provide convincing evidence to suggest that the security and privacy breaches lead to identity theft. The government should take into account of the criteria to create their websites. This will thus help to secure privacy of their citizen.

2.6.2 Ease of use

- Quality of links

Cullen and Houghton (2000, p.260) suggest that “quality of links means that no dead links are appear in the website.” Furthermore, “A What’s new section should be provided for new links.”

In addition, Santos (2003) proposes the term “linkage” to refer to the quality of links and he defines that linkage means the number and quality of links that websites allow user to navigate. Abels, Whiter and Hahn (1999) also use the term “linkage” and propose that it means the web pages provide links that include relevant information within the website as well as links to the other websites. Additionally, it is stated that quality of links also covers the accessibility to relevant topics. This will help users to retrieve related information. In this respect, Abels, Whiter, and Hahn (1999) makes a valid point that it is significant to create the effective links. The consistency of checking the quality of links is also included because a website often links to
other websites as well. This is to avoid links to websites that are not available. Santos (2003) also proposes that poor quality of linked sites is more likely to decrease the quality of e-Service quality.

○ Feedback mechanisms

Cullen and Houghton (2000, p.247) also claimed that a good website should provide feedback mechanisms effectively. For example, website should provide clear statement of feedback mechanisms so that the user can find the information for contacting directly to the website.

According to Asia-Pacific Development Information Programme (2005), Public Feedback Mechanisms (PFMs) are defined as two-way communication between citizens and governments in order that the government can receive feedback from citizens. It is suggested that citizens should know who to contact, how long they should wait for a response, and can check the progress.

○ Accessibility

Cullen and Houghton (2000, p.260) recommend that a good website may support users by providing different language for foreigners. With reference to Abanumy, Al-Badi, and Mayhew (2005), they propose that web accessibility is to allow citizen access to information from the e-government website. It is also suggested that the information on the website should be reached by all people, including people with any disabilities such as blindness, low vision, deafness, hard of hearing and physical disabilities. In addition, Caldwell et al. (2002) refers to web accessibility that means “... anyone using any kind of web browsing technology must be able to visit any site and get a full and complete understanding of the information as well as
have the full and complete ability to interact with the site if that is necessary”.

Moreover, Abanumy, Al-Badi, and Mayhew (2005) also presents that e-government website which is accessible should be designed with easy accessibility for everyone. This means that all citizens can visit the website. They suggest that the accessible web design includes layout, readability, colour choice and browser-independence (Abanumy, Al-Badi, and Mayhew, 2005, p.100).

- Design

The criteria aims to evaluate the design of the website. It can effectively account for website design that should be consistent in the way that the organisation try to represent them. Huizingh (2000, p.125) suggests that the website may apply “the structure of hierarchical directory” in order to separate and organise the information. This will make the website more organised and easy to use.

- Navigability

Cullen and Houghton (2000, p.261) suggest that navigation options should be appear and distinct. Furthermore, search facility of each webpage should also be accessible. Structured site map should be provided for user in order to navigate the website easily.

2.7 E-Government implementation

2.7.1 Stages analysis of e-Government implementation

Mofleh and Wanous (2009, p.132) offers a strong argument, maintaining that stage analysis is the process to analyse the stage of service
delivered by a government website. This analysis helps to demonstrate the improvement of the e-Government across governmental organisations. Additionally, it is claimed that stage analysis consists of “generic e-Government models Mofleh and Wanous (2009, p.132)” that are categorised into various stages of service delivered (Layne and Lee, 2001; Moon, 2002; Siau and Long 2005).

Mofleh and Wanous (2009, p.133) also present a well-structured and in-depth analysis of stages analysis of e-Government implementation. They propose the stages analysis as follows:

- The first stage of transformation is the presence of web. This means that governmental organisations attempt to publish information on their websites. The websites will therefore provide services to the citizen by giving general information about the services of the organisations.

- The second stage is interaction which means that government organisations attempt to interact with their citizens by using websites. Mofleh and Wanous (2009) also presents the examples of interaction that are “using email to get feedback or inquiry purposes, using chat rooms, online inquiries and document downloads Mofleh and Wanous (2009, p.133).”

- The third stage is transaction or ‘vertical integration stage’. This stage is to serve users to make transaction online with a single government organisation. The examples of transaction are a tax payment and car licence renewal.
The fourth stage is integration. It is defined so as to provide services online from a single point. In other words, the services provided from different public agencies can be integrated to government website that can yield various services of those public agencies to citizens directly.

Moreover, Mofleh and Wanous (2009, p.133) also explains that e-government is implemented effectively at highest level by meeting the higher stages of analysis of e-Government implementation. It is evident that each stage can have an impact on the delivery of government's services relating to structure and process. This is because it will allow the government to provide services online effectively. This study will therefore examine a sample of government websites of Thai Ministry of Education and relevant government agencies by investigating, evaluating and observing which services provided through the websites. It will also intend to investigate what is the highest level of service made available. This will help Thai government to indicate each stage of the development accordingly.

2.7.2 Strategies of e-Government implementation

Kaaya (2004, p.41)’s findings stress the point that the strategies of e-Government implementation is that the government should have the essential infrastructure such as computer hardware and software. Telecommunications services are significant so as to implement effective use of e-Government as well. The government should take into consideration the fact that those aspects are significant to implement e-Government effectively and efficiently. Their users can therefore have unlimited access to government website (Kaaya, 2004 and Heeks, 2001).
CHAPTER 3
METHODOLOGY

3.0 Introduction

The research will be conducted by collecting the evidence by investigating, evaluating and observing website of Ministry of Education of Thai government as well as the website of Office of Permanent Secretary for Education, Office of the National Education Council, Office of the Higher Education Commission in and Office of Vocational Education Commission. In order to examine them, the researcher will explore those websites thoroughly in terms of the main criteria according to Cullen and Houghton’s (2000, p.247) research as stated in Chapter 2 page 15-20.

3.1 What is research?

According to Merriam-Webster Online Dictionary (2012), the definition of research is “studious inquiry or examination; especially: investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical applications of such new or revised theories or laws” (as cited in Connaway and Powell, 2010, p.1). In addition, Connaway and Powell (2010) also proposed the definition of research from Hillway (1964). It was defined that “a method of study by which, through the careful and exhaustive investigation of all the ascertainable evidence bearing upon a definable problem, we reach a solution to that problem” (Connaway and Powell, 2010, p.1).

Connaway and Powell (2010) elaborate that two main categories of research are basic research and applied research. The basic research is defined as “pure,
theoretical, or scientific research that is primarily interested in deriving new knowledge and is, at most, only indirectly involved with how that knowledge will be applied to specific, practical, or real problems (Connaway and Powell, 2010, p.2)”. The definition of applied research is that “it encompasses a variety of specific research techniques such as systems analysis and operations research. In contrast to basic research, applied research emphasizes the solving of specific problems in real situations. Much of library-related research has been applied research dealing with everything from evaluating book collections to analyzing automated circulations systems (Connaway and Powell, 2010, p.2)”. 

3.2 Research methods

The research methods that will be applied for this research are investigation, evaluation and observation. This research will be conducted by collecting possible information relating to the topic that has been established according to the identification of the problems.

3.3 Qualitative research

With reference to Pickard (2007), it is generally accepted that the qualitative research is valid as it effectively applies the techniques that are appropriate to data collection. In addition, Pickard elaborates from Patton (1987)’s idea that “purposive sample is employed in order to achieve a sample of maximum variation, extreme case or typical case (Pickard, 2007, p.14)”.

It is concluded that a qualitative research design consists of the significant components that are “literature review, the theoretical framework, fieldwork in a natural setting, using a human instrument, purposive sampling, appropriate data
collection techniques, inductive analysis, emergent design, iteration of activities, grounded theory, negotiated outcomes, and forming a tentative working hypothesis, leading to transference of findings based on contextual applicability (Pickard, 2007, p.14)’.

Pickard (2007, p.15) proposes the process diagram of qualitative research design which is adapted from Kumar (1999) and Lincoln and Cuba (1985):

**Figure 4:** Qualitative research design (adapted from Kumar, 1999, and Lincoln and Guba, 1985)
3.3.1 Observation

Pickard (2007)’s study is a well-structured, in dept-analysis of observation. It is evident that observation is defined as a research methodology which is conducted so as to give evidence relating to the research. It is believed that all research is more likely to include observation. In addition, the study of Pickard is intended to focus on observation as a direct method of data collection as well as observation that need to be designed, created and carried out in order to collect the data.

Patton (1987, p.81, as cited in Pickard 2007, p.201) proposes five aspects of variation in the process of observation:

- The role of the observer
- Portrayal of that role to others
- Portrayal of the purpose of the research
- Duration of the observations
- Focus of the observations

It is believed that the five aspects of variation yield a beneficial process of the research in order to discuss about the possible methods of how to observe, the role of the observer and what to observe respectively.

On the other hand, Connaway and Powell (2010, p.216) proposed the process of observation which the researchers are expected to:

- Reviewing the researcher literature relating to the study in order to gain general background of the study
- Contacting a community with integrity
- Selecting a sample which is the most relevant to the research questions
- Specifying and following the selected role of researcher
- Collecting and maintaining the data carefully
Concerning about related ethical issues
Leaving the field ethically
Analysing the result of the data carefully and accurately

The observation applied in this study are technique in order to observe the e-Government websites relating to education in Thailand whether they meet the key criteria in terms of usability, currency and authority, bibliographic control, services, privacy, quality of links, feedback mechanisms, accessibility, design and navigability. Thus, the process of observation in this study is different from the previous theories in terms of observing websites. Adapting from the process of observation by Connaway and Powell (2010), this study was carried out by the process of observation:

- Reviewing the literature relevant to the study to have general background
- Establishing conceptual framework of the study by adopting knowledge from literature review
- Selecting e-Government websites that are the most relevant to the research questions
- Specifying and following the objectives that were established
- Observing the e-Government websites
- Collecting the data from observation carefully
- Analysing the result of the data carefully and accurately

It can be concluded that this study applied the technique of observation that was adapted from the previous research. However, the process of observation is divergent in terms of applying e-Government websites as sample to be observed.
3.4 Research design

According to Bryman (2004), it is evident that researcher implements the research design in order to set up a framework to collect and analyse the data. The research process depends on the selection of a research design which demonstrates the decisions regarding the priority being applied to the dimensions of the research process. Additionally, the significance of research design also includes the following aspects (Bryman, 2004, p.27):

- Demonstrating the association between variables
- Universalizing to larger groups of individuals than, those forming part of the investigation
- Comprehending behaviour and the meaning of the behaviour in its particular social context
- Providing an evaluation of social phenomena and the interconnections

The methodology which was implemented in this research is observation. This is in order to carry out the research according to the objective that has been established. In addition, the investigation and evaluation will be applied to this research as well in order to set a framework to collect the data. The literature review relating to e-Government in Thailand is also analysed so that the basic knowledge regarding e-Government specifically in Thailand is demonstrated and understood.

A qualitative approach of this research is observation in order to analyse the data obtaining from the website of Ministry of Education in Thailand, including the website of Office of Permanent Secretary for Education, Office of the National Education Council, Office of the Higher Education Commission and Office of Vocational Education Commission. This is to investigate whether they comply with
the policies of the main Ministry of Education website which is the national
government website.

The following links of the websites that were applied in this research was
shown as below details:

1. Website of Ministry of Education in Thailand
   (http://www.moe.go.th/English/)

2. Website of Office of Permanent Secretary for Education
   (http://www.ops.moe.go.th/home)

3. Website of Office of the National Education Council

4. Website of Office of the Higher Education Commission
   (http://www.mua.go.th/)

5. Website of Office of Vocational Education Commission
   (http://www.vec.go.th/)

The above websites were selected because they are all relevant to the
Ministry of Education in Thailand. The main website of Ministry of Education in
Thailand (http://www.moe.go.th/English/ and http://www.en.moe.go.th/) and the
website of Office of the National Education Council provide English information
while others do not have English versions. However, all of the websites were
investigated, evaluated and observed according to the research design by applying
the evaluation criteria of Cullen and Houghton (2000). The criteria is to provide a
framework for this research in order to investigate, evaluate and observe the website
from Ministry of Education in Thailand and other websites relevant to the Ministry.
3.5 Ethical issues

This research will only evaluate the website of Ministry of Education and the websites of organizations relevant to education in Thailand are effective in terms of usability, currency and authority, bibliographic control, services, privacy, quality of links, feedback mechanisms, accessibility, design and navigability. Therefore, there is no risk to the participants or researcher directly.

Another issue concerns ethical considerations. It is has been pointed out that questionnaires and face-to-face interviews may involve discussions of rather sensitive issues which could compromise informants. In short, any criticism of the current system may merely be construed as politically motivated in Thailand.
4.0 Introduction

The purpose of this chapter is to demonstrate the analysis of the results of this study. The data was collected from the investigation, evaluation and observation towards the websites of Ministry of Education in Thailand, including the website of Office of Permanent Secretary for Education, Office of the National Education Council, Office of the Higher Education Commission and Office of Vocational Education Commission. This chapter presented the results of the study whether the websites comply with the significant evaluation criteria according to the main evaluation criteria from Cullen and Houghton (2000). In addition, this chapter also showed the interpretation and analysis of the data that were collected by the process of observation.

4.1 The analysis of the website of Ministry of Education in Thailand

(http://www.moe.go.th/English)

4.1.1 Information Content

<table>
<thead>
<tr>
<th>Criteria for evaluation</th>
<th>Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Orientation to Website/ Usability</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Currency and Authority</td>
<td>Yes</td>
</tr>
<tr>
<td>3. Bibliographic control</td>
<td>Yes</td>
</tr>
<tr>
<td>4. Services</td>
<td>Yes</td>
</tr>
<tr>
<td>5. Privacy</td>
<td>No</td>
</tr>
</tbody>
</table>
Comments

Orientation to Website/ Usability

- The website of Ministry of Education in Thailand provides clear purpose which is about education in Thailand. The information about education presented is the Education system in Thailand, Education news, Education statistics, Article regarding Education and International school in Thailand.

- The website provides the external links to the websites of other governmental agencies relating to educational issues. Those are for example Office of Minister, Office of Permanent Secretary of Education and Office of the National Education Council.

- The links from external organizations is also included such as UNESCO, Asia-Pacific Economic Cooperation (APEC) and Southeast Asian Ministers of Education Organization (SEAMEO).

- The target audiences of this websites mainly focus on citizens such as teachers, parents, general people who are interested in the information in education area.

Currency and Authority

- Currency is applied by providing updated information such as education news.

- The contact person is also addressed at the bottom of the web page. For example, the information of the organization that the
Authority of this website is stated clearly at the bottom of the page. The authority of this website is “Bureau of Information and Communication Technology, Office of the Permanent Secretary, Ministry of Education.” Additionally, the details about contact information are also listed so that the user can apply to get in touch with the organization.

The references of the information are also mentioned on the web page.

The sources published on the web pages are reliable because the organizations which are responsible to publish the web pages are under the control of Ministry of Education in Thailand.

Bibliographic control

- The bibliographic control is stated in this website. For example, the articles relating to education cited the author, publication date as well as publisher.

Services

- The services provided are open to every user without charges.
- Navigation options are distinct at the top of the pages. For example, the main menu is listed on the left hand side so that the user can navigate easier by clicking on the main tab to navigate the website relevant to what they expect to search such as the information about Ministry of Education in...

- The website also provide the navigation option with the main tab relating to other organizations who deal with education area such as Office of Permanent Secretary for Education and Office of the Higher Education Commission.

*Privacy*

- The website did not mention regarding privacy right of users which should be stated clearly on the website according to Cullen and Houghton (2000, p.247). No clear policy regarding privacy to users was stated in the websites as well as other web pages.

### 4.1.2 Ease of Use

<table>
<thead>
<tr>
<th>Criteria for evaluation</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Quality of Links</td>
<td>No</td>
</tr>
<tr>
<td>2. Feedback Mechanisms</td>
<td>No</td>
</tr>
<tr>
<td>3. Accessibility</td>
<td>Yes</td>
</tr>
<tr>
<td>4. Design</td>
<td>No</td>
</tr>
<tr>
<td>5. Navigability</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Comments

Quality of Links

- Dead links appear in the website. However, “What’s News” section is provided for updated information.

Feedback Mechanisms

- Feedback mechanisms do not appear as well as clear statement of feedback mechanisms are not provided so that it will be difficult for user to provide the feedback.

Accessibility

- Both Thai and English versions are provided in the website. Therefore, foreigner can navigate the website easier.

Design

- The design of the website is not consistent because each web page has different design and may make user confused or lost when they need to navigate the website. The example is that the main web page has mainly white and gold while other web pages have different colours in blue, yellow, white with various backgrounds.

Navigability

- Navigation options appear clearly by providing the main menu on the left hand side. Therefore, it is more convenient for user to navigate by using the tab in order to search for the information they are looking for.
4.2 The analysis of the website of Office of the Permanent Secretary of Education

(http://www.ops.moe.go.th/home/)

4.2.1 Information Content

<table>
<thead>
<tr>
<th>Criteria for evaluation</th>
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</tr>
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<tr>
<td>2. Currency and Authority</td>
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<td>3. Bibliographic control</td>
<td>Yes</td>
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<tr>
<td>4. Services</td>
<td>Yes</td>
</tr>
<tr>
<td>5. Privacy</td>
<td>No</td>
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</table>

Comments

Orientation to Website/ Usability

- The purpose of the website is stated clearly (Office of the Permanent Secretary of Education, 2012):

  “– To provide the Education Minister with information to initiate and implement policies which aid and manage a budget plan and include the evaluation of the Ministry of Education’s operation performance.”

  “– To coordinate the administrative and management systems and services in Ministry of Education.”
“– To represent and act as the public face of Ministry of Education; to present project to students, teachers, educational personnel, parents and the public.”

“– To act as a coordinating unit for administration and cooperation among ministries and government offices; cooperate with the national committee (as stated by law or government policy) and promote international coordination in education.”

“– To promote private education and non-formal education; improve the development of educational law; accelerate professional development.”

“– To develop Management Information System.”

Currency and Authority

- Currency is applied by providing updated information such as education news. The news section is divided into two parts that are 1. News relating to the projects and activities of the Office of Permanent Secretary of Education and 2. News relating the strategies and policies of the Office of Permanent Secretary of Education.

- The contact person is mentioned at the bottom of the web page such as the name of the organization and email address that the user can use to contact. However, no other contact details are provided such telephone number and fax, etc.
Authority of this website is addressed clearly at the bottom of the page. The authority of this website is “The Information and Communication Centre, The Office of Permanent Secretary of Education, Ministry of Education.” The references of the information are also mentioned on the web page.

**Bibliographic control**

- The bibliographic control is stated in this website. For example, the articles relating to education cited the author, publication date as well as publisher.

**Services**

- The services provided are open to every user without charges.
- Navigation options are distinct at the top of the pages. For example, the main menu is listed at the top of the pages. The user therefore can access to the information by clicking on the main tab to navigate the website relevant to what they are looking for.
- The services that the website provide such as the information about the Office of Permanent Secretary of Education, Education News, Education Statistics, Articles and projects about Education, the relevant departments in the Office of Permanent Secretary of Education and the organization relevant to education in Thailand.
- The website also facilitate user by providing the service to download the whole document such as Government plan of Office of Permanent Secretary of Education.
Privacy

- No clear policy regarding privacy to users was stated in the websites as well as other web pages.

4.2.2 Ease of Use

<table>
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<tr>
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<td>3. Accessibility</td>
<td>No</td>
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<tr>
<td>4. Design</td>
<td>Yes</td>
</tr>
<tr>
<td>5. Navigability</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Comments

Quality of Links

- Dead links appear in the website. However, “What’s News” section is provided.

Feedback Mechanisms

- Feedback mechanisms do not appear as well as clear statement of feedback mechanisms are not arranged for user to give the feedback to the website.

Accessibility

- English version is not provided in the website. Therefore, foreigner may find it very difficult to navigate the website.
Design

- The design of the website is consistent. Every web page has the same design. For example, the background of each web page is the same style and colour.

Navigability

- Navigation options appear clearly by providing the main menu on the left hand side. Additionally, search box is also provided so that user can type specific information that they want to find. For example, the researcher tried to search the information about “Southeast Asian Ministers of Education Organization (SEAMEO)” relevant to education. The search results are 12 articles matched with the term “SEAMEO”. However, when the researcher tried with the full name of the organisation, no article was found.

4.3 The analysis of the website of Office of the National Education Council

4.3.1 Information Content

<table>
<thead>
<tr>
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<tbody>
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</table>
**Orientation to Website/ Usability**

- The website of Office of the National Education Council provides a clear statement of purpose. The vision of the website is stated apparently in the website by providing its aims to serve as the lead agency responsible for formulation of policies, plans and standards of national education; research and evaluation of educational provision; and development of learning (Office of the National Education Council in Thailand, 2012).

- The mission of the website is stated clearly by aiming to:
  
  “1. Formulate educational policies and plans with a view to providing equal access to education for all; establishing an education system of quality and effectiveness; and enhancing quality of learning; 2. Evaluate educational provision, based on the National Scheme of Education and relevant government policies; 3. Conduct research for further development of educational provision, and strengthening capacity for competitiveness; and 4. Develop opportunities and refining educational laws, conducive to increasing educational system of high quality (Office of the National Education Council in Thailand, 2012)”.

- The purpose of the website also intends to provide information and services to the target audiences who are teachers, educational personnel, parents and the public.
Currency and Authority

- Authority of this website is stated clearly at the bottom of the page. The authority of this website is “Office of Education Council in Thailand”.
- The details about contact information are also listed so that the user can apply to communicate with the organization.

Bibliographic control

- The bibliographic control is addressed accurately in this website. For example, the articles relevant to educational research conference cited the author, publication date as well as publisher clearly.

Services

- The services provided are open to every user without charges.
- The links provided are effective and relates to the relevant information.
- Navigation options are distinct at the top of the pages and on the left hand menu. For example, the main menu is at the top of the pages. Therefore, users can navigate easier by clicking on the main tab such as Home, Current Development, Publication, News, Contact Us. Another option to navigate is the main menu listed on the left hand side consists of History, Vision, Mission, Organization, Executives, Education Council and Important Links.
Privacy

- Clear policy about privacy for users is not mentioned.

4.3.2 Ease of Use

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<tr>
<td>5. Navigability</td>
<td>Yes</td>
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</table>

Comments

Quality of Links

- “News” section is provided for updated information such as education news and policies.

Feedback Mechanisms

- Clear statement of feedback mechanisms are not arranged for user to provide the feedback.

Accessibility

- The website also provide English version in order to facilitate foreigner to find the information.
Design

- The design of the website is consistent because the style of the website is the same as well as the colours applied are controlled by using only three main colours that are light blue, purple and white. The information on the web is listed in black that is easy to read.

Navigability

- Navigation options appear clearly by providing the main menu at the top of the page and on the left hand side; thus, users can navigate by using the tab to search for the information.

- The website also provide three search boxes: 1. Search box for searching the publications of Office of the National Education Council, 2. Search box for searching education research and 3. Search box for searching general keyword from the web. Therefore, users have many options to search for their information.
4.4 The analysis of the website of Office of the Higher Education Commission
(http://www.mua.go.th/)

4.4.1 Information Content

<table>
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<td>4. Services</td>
<td>Yes</td>
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<tr>
<td>5. Privacy</td>
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</table>

Comments

Orientation to Website/ Usability

- The website provide clear purpose (Office of the Higher Education Commission, 2012):

  “– To formulate policy recommendations, elevate education standards, and carry out international cooperation in higher education.”

  “– To propose policies and strategies in higher education to develop Thai identity, culture and wisdom.”

  “– To devise criteria and guidelines for resource allocation and propose framework for resource development.”

  “– To establish higher education institutions and community colleges and provide financial support.”
“ – To coordinate human resources development; improve student capacity, include students with special needs.”

- The purpose of the website also intends to provide information and services to the target audiences. Those are students, teachers, educational personnel, parents and the public who are interested in education in terms of undergraduate and graduate levels.

**Currency and Authority**

- The website provides updated news regarding higher education. The “News” section clearly appears on the first page of the website so that the users can find the updated information easier.

- The contact person is also stated at the bottom of the web page. For example, the contact details of the Office of the Higher Education Commission are listed. Those are the address, phone number, fax number and email address.

**Bibliographic control**

- The bibliographic control is addressed in this website. For example, the articles relating higher education cited the author, publication date as well as publisher. However, the bibliographic control of the website is not consistently for some web pages. This means that some web pages did not cite the information about author, publication date and publisher.
Services

- The services provided are open to every user without charges.
- The website provides the services mainly focusing on the information about higher education. For example, the universities under control of the Office of the Higher Education Commission. Also, the information about the projects in higher education is also addressed. The website provides the links that direct to another web page about the projects. The users can therefore search the information easier.
- The website facilitates users by providing PDF files to download. For example, the users can download the documents regarding projects and reports in higher education.

Privacy

- The website did not mention about privacy right of users which should be stated clearly on the website.

4.4.2 Ease of Use

<table>
<thead>
<tr>
<th>Criteria for evaluation</th>
<th>Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Quality of Links</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Feedback Mechanisms</td>
<td>Yes</td>
</tr>
<tr>
<td>3. Accessibility</td>
<td>No</td>
</tr>
<tr>
<td>4. Design</td>
<td>No</td>
</tr>
<tr>
<td>5. Navigability</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Comments

Quality of Links

- No dead links were found from this website.

Feedback Mechanisms

- Feedback mechanisms appear. The users can click on the link that will direct to the page to provide the feedback. The users also need to register with the website first before giving the feedback. The drop down list in the feedback page is also provided so the users can choose the topic relevant to what they want to give the feedback such as feedback about the government university, higher education policy, requesting to receive any helps from the organization or technical issues found from the website.

- The section to evaluate the satisfaction of users towards the website is also addressed at the first page of website. Therefore, the administrative of the website can gain the feedback directly from the users as well as the users can provide the feedback to them.

Accessibility

- English version is not provided in the website. Therefore, foreigner who is interested to find the information regarding higher education in Thailand may have difficulties to navigate and understand the website.
Design

- The design of the website is not consistent because each webpage has different design. The colour of the background is different in each webpage as well as the colour of the alphabet applied is varied. Hence, differences in the design may make user confused.

- The links to other websites are provided with many graphic that may make users confused because the transmission of the alphabet is always changed with different style. The users may complain when they need to navigate the website.

Navigability

- Navigation options are distinct on the left side of the pages. For example, relevant information about Ministry of Education in Thailand, Mission and Vision of Office of the Higher Education Commission, the relevant departments of Office of the Higher Education Commission, Higher education projects in Thailand, Articles and reports on higher education in Thailand.

- The website also provides the navigation option with the main tab relating to other organizations who deal with education area such as Association of University Presidents Thailand and Ministry of Education in Thailand.
4.5 The analysis of the website of Office of Vocational Education Commission

(http://www.vec.go.th/)

4.5.1 Information Content

<table>
<thead>
<tr>
<th>Criteria for evaluation</th>
<th>Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Orientation to Website/ Usability</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Currency and Authority</td>
<td>Yes</td>
</tr>
<tr>
<td>3. Bibliographic control</td>
<td>Yes</td>
</tr>
<tr>
<td>4. Services</td>
<td>Yes</td>
</tr>
<tr>
<td>5. Privacy</td>
<td>No</td>
</tr>
</tbody>
</table>

**Comments**

**Orientation to Website/ Usability**

- The website has clear purpose to (Office of the Vocational Education Commission, 2012):

  “- Provide the general public with access to technical and vocational education.”

  “- Assess the demands of the labor markets and promote self-employment in accordance with social and economic development of the country.”

  “- Produce and develop a vocational workforce in all professional levels.”
“- Implement and standardise quality vocational education management and administration.”

“- Promote research, innovation and technology development for a competitive market.”

- The target audiences mainly focus on providing information and services for students, teachers, parents, general people who are interested in e-Government information regarding vocational education area.

Currency and Authority

- The currency of this website is by providing “What’s News” section in order to update the information about vocational education as well as the activities that the Office of the Vocational Education Commission have carried out recently. This will help the target audiences to receive the updated news promptly when they surf the first page of the website.

- “What’s News” section is currently updated. For example, the news about conference on solving the problems relating to vocation education has been posted presently.

Bibliographic control

- The website implemented bibliographic control such as author, publication date and publisher. For example, the research on the satisfaction of users toward the services of the Office of Vocational education Commission covers author, publication date and publisher.
Services

- The services regarding vocational education are supplied to the target audiences without fees.
- Information about laws, regulations and acts relating to vocational education can be downloaded without fees. Users can just click on the main tab regarding relevant laws and acts on the first page of website and then it will direct to another page for downloading the documents.
- Forms, documents, reports and researches relevant to vocational education can be downloaded for free. The website provides the separated navigation tab for downloading the documents. Therefore, users can find the tab easily from the main menu.
- Users can complain any issues regarding vocational education. For example, users can complain about the services by submitting their complaint through the web page for comments and complaints.

Privacy

- Privacy statement is not addressed as well as no clear policy regarding privacy is stated.
4.5.2 Ease of Use

<table>
<thead>
<tr>
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<td>Yes</td>
</tr>
<tr>
<td>5. Navigability</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Comments

Quality of Links

- The quality of links is effective and no dead links appear.

Feedback Mechanisms

- The website facilitates users by providing navigation tab regarding feedback mechanisms. The users can find the tab from the main menu and just click on the tab that will direct users to another web page. The page provides the form that consists of two parts: 1. Personal details such as name, address, email and phone 2. Complaint details such as subject and message body. However, clear statement of feedback mechanisms is not provided.

Accessibility

- English version is not provided in the website. Therefore, it will be difficult for foreigner to navigate this website.
Design

- The design of the website is consistent because each web page has the same design. In other words, the website control the design for every page of the website by using the same style, colour and background. For example, every page applies the same background and colour that are mainly red, yellow and white. This will help the users to navigate the website easier.

Navigability

- The website implemented navigation options by providing the main menu on the left hand side. The main menu consists of 8 main tabs that are: 1. Home, 2. About Us, 3. News, 4. Downloading 5. Activities 5. FAQs, 6. Contact Us and 7. Site Map.
- “About Us” tab also consists of the sub categories: history, vision and mission, strategy, policy, organization structure, administrator, laws and acts, vocational schools under control of Office of Vocational Education Commission and departments under control of Office of Vocational Education Commission.
- “Contact Us” tab also consists of the sub categories: contact details, visiting book and complaint.
CHAPTER 5
DISCUSSION

5.0 Introduction

This chapter discusses the overall findings that derive from the analysis of the results from previous chapter. The discussion is supported by the literature reviews as well as the findings from investigation, evaluation and observation. The analysis of the results that were carried out contributed to the evidence and findings collecting from qualitative methodology that is observation. This method supported this research to be conducted by investigating and evaluating e-Government in Thailand focusing on the websites of Ministry of Education and the websites of relevant governmental organizations. Additionally, the conceptual framework that derived from Cullen and Houghton (2000, p.247)’s research was therefore applied so that this research was conducted with theoretical framework that help to analyze the data collecting from observation.

In order to discuss regarding related issues, the research questions were addressed again with the relevant issues derived from investigation, evaluation and observation towards e-Government in Thailand by using the websites of Ministry of Education and the websites of relevant governmental organizations as examples. It is also hoped that the results of this study will help to improve the structure of e-Government in Thailand. In addition, the researcher hopes that this study will benefit Ministry of Education and other governmental organizations relating to education in Thailand in order to develop their websites by using the results of this study to augment the standard of e-Government in Thailand.
5.1 Research questions

5.1.1 How best can the website of Ministry of Education in Thailand meet the key criteria in terms of orientation to website or usability, currency and authority, bibliographic control, services, privacy, quality of links, feedback mechanisms, accessibility, design and navigability?

According to the analysis of the results, it shows that the website of Ministry of Education in Thailand meet some main evaluation criteria of e-Government website. In terms of Information content, the website meets four criteria that are orientation to website or usability, currency and authority, bibliographic control and services. In terms of ease of use, the website meets only two criteria that are accessibility and navigability.

Orientation to website or usability was applied to the website. It can be assumed that the website need to provide a clear purpose in terms of education in Thailand and other relevant issues because the website is the main portal to access in the information regarding education in Thailand. Additionally, the website of Ministry of Education is the major ministry that deals with all matters relevant to education in Thailand as well as monitors other governmental organizations relating to education such as Office of the National Education Council, Office of the Higher Education Commission and Office of Vocational Education Commission. However, students may find it difficult to navigate the website because the information provided is for the target audiences that focus only on teachers, educational personnel, parents and the public.

Currency and authority were also applied to the website. These criteria are very important to measure whether the website provide updated
information relating to education in Thailand. The website, however, issued some web pages which are currently not updated. For example, education statistics in brief section only provide the statistics from the academic year 1995 to 2005. It can be beneficial to Ministry of Education to perceive this issue so that they can improve the website by investigating the web pages that were not currently updated. This improvement can support the website of Ministry of Education to meet the needs of Thai citizen. They can therefore receive the updated educational information that they can apply as well as reduce their time to find the information from other relevant sources.

Authority of the website was applied by addressing the contact person and contact details. This will facilitate the users to find the contact person who they can communicate directly. Additionally, the authority of the website also established the credibility and reliability to the website.

Bibliographic control was applied to the website. This will help the website also have more credibility in terms of providing reliable information because the website cited about author, publication date as well as publisher. Those will benefit to the users to find the reliable sources of the information. However, as the analysis of results, some web pages of the website did not provide bibliographic control. Therefore, the staff responsible to update the website should take into account of this matter and implement bibliographic control correctly.

With reference to the analysis of results in terms of services, the criteria was also applied by providing the services to every user without charges as well as by providing effective links relating to the relevant educational information. However, the website did not provide the services in
terms of downloading the documents from website directly. The user also cannot complain any issues and provide through the website because online forms was not provided for users to fill in their complaint and submit through the website. Navigation options were also implemented. In order to meet the needs of Thai citizen, the website should have those criteria by having distinct navigation options. Without these criteria, it can be concluded that the website cannot successfully meet the need of Thai citizen. Therefore, these criteria are very important to the website so that every user can receive the services equally and effectively.

However, privacy was not implemented. It is generally accepted that privacy is significant to be applied to e-Government websites. According to Cullen and Hougton (2000); Choudrie et al. (2000) and Nils Hittech, Parson, Richardson and Triana (2011), it is suggested that website should apply clear policy in terms of privacy to target audiences. No privacy policy applied could make the website less effective and less reliable to users’ perspective because clear privacy policy is one of the key criteria to evaluate e-Government websites. Therefore, lacking of privacy policy can make the website doesn’t meet this criteria. In order to improve the website to be more effective and reliable, Ministry of Education should concern about this criteria and adjust the website by adopting the privacy policy so that the users can rely on the website when they need to navigate and thus can be ensured that their personal details will not be disclosed to the third party.

In terms of the main criteria regarding ease of use, the website applied accessibility by providing both Thai and English versions. This can assist foreigner to navigate the website easier. Additionally, the function of cross-
government requirement was also added in order to facilitate users to search for other relevant information from other departments. Therefore, the website meets the evaluation criteria of e-Government website. Furthermore, navigability was applied by providing the main menu for users to surf the web more convenient. This website is therefore easy to use in terms of accessibility and navigability respectively.

Nevertheless, some sub categories under the main criteria regarding ease of use were not applied. Those are quality of links, feedback mechanisms and design. Quality of links was not applicable because dead links appear when surfing some web pages. This will make the website less effective and less reliable to the users as well because when the users need to navigate the web pages and found that those are actually dead links. They can be disappointed because it wasted their time to search the information from other sources instead. Therefore, the website should take into account the fact that it is significant to implement the criteria and improve the web pages that cannot be navigated functionally because of dead links.

The website did not apply feedback mechanisms as well as no clear statement of feedback mechanisms was stated. This can be difficult for users to give their feedback. Feedback mechanisms is one of the key criteria to evaluate e-Government website and therefore Ministry of Education should concern about this by improving the website to have feedback mechanisms to best meet the need of users. The users can provide feedback to them directly and the Ministry can have the feedback in order to develop their website more effectively.
Design of the website was not consistent because of the differences in the design of each web page such as background and colour. This can confuse the users when they need to navigate the web page. Therefore, Ministry of Education should improve the design of the website to be more consistent by having the same design of the website so that the users will not be confused when they navigate different web pages.

In conclusion, the website of Ministry of Education meet the key criteria in terms of orientation to website or usability, currency and authority, bibliographic control, services, accessibility and navigability. However, the website still lack of some significant criteria. Those are privacy, quality of links, feedback mechanisms and design. Ministry of Education thus should embrace other key criteria that were not applied so that the website can provide better service to users and best meet their needs.
5.1.2 How best can the websites of Office of Permanent Secretary for Education, Office of the National Education Council, Office of the Higher Education Commission and Office of Vocational Education Commission meet the key criteria in terms of orientation to website or usability, currency and authority, bibliographic control, services, privacy, quality of links, feedback mechanisms, accessibility, design and navigability?

With reference to the analysis of the results, it presents that the websites of Office of Permanent Secretary for Education, Office of the National Education Council, Office of the Higher Education Commission and Office of Vocational Education Commission meet some key criteria.

- **The website of Office of Permanent Secretary for Education**

The website of Office of the Permanent Secretary of Education meet the important criteria that are orientation to website or usability, currency and authority, bibliographic control, services and navigability. However, privacy, quality of links, feedback mechanisms and accessibility were not applied. According to analysis of results, it presents that lacking of privacy can decrease the target audiences’ reliability because they cannot be ensured that their privacy will not be revealed to the third party. The audiences may complain regarding quality of links because when they need to surf the web and expect to find the relevant information, they cannot find the links that they want due to dead links. This will waste their time and can make them frustrated. Feedback mechanisms are important in terms of providing feedback to the web by the target audiences. When the target audiences have any complaints, they can provide to the web directly. Without the criteria, it may dissatisfy the target audiences. English version is now necessary to be
published on the web because it is the international language and therefore the foreigners that are interested in the educational information on the web may have many difficulties to navigate and understand.

Therefore, the Office of the Permanent Secretary of Education should take into consideration that those criteria are significant to improve their website to best meet the users. In order to embrace the criteria that the website lacked of, the Office of the Permanent Secretary of Education should scrutinize the whole websites so that they can understand which of part of the website that they need to develop as well as which criteria that they need to improve the quality.

- **The website of Office of the National Education Council**

  The website of Office of the National Education Council were implemented some significant criteria. Those are orientation to website or usability, currency and authority, bibliographic control, services, quality of links, accessibility, design and navigability. However, privacy and feedback mechanisms were not implemented. Privacy is needed to be implemented to the website of Office of National Education Council because the target audiences may complain that they prefer to have privacy policy in order to be guaranteed that their personal details will not be disclosed to the third party. Additionally, developing the criteria will make the web be more reliable for the target audiences. Feedback mechanisms are important in terms of providing feedbacks to the web. The target audiences such as teachers, educational personnel, parents and the public may complain any issues
regarding education standards. Without the criteria, the audiences may perceive that the web still lack of the best quality to meet their needs.

Therefore, Office of the National Education Council should concern about the criteria that they still lacked of and try to adopt them to the web in order to present their web with better quality.

- **The website of Office of the Higher Education Commission**

  The website of Office of the Higher Education Commission applied orientation to website or usability, currency and authority, services, quality of links, feedback mechanisms and navigability. However, bibliographic control, privacy, accessibility and design were not implemented. The Office of the Higher Education Commission is responsible to improve higher education standards and therefore any relevant information relating to the higher education should also have bibliographic control so that the users can be ensured that the information that they receive is reliable. Privacy is the key significant for every e-Government websites as stated and therefore, the web should implement it. Additionally, having English version is also the key criteria to elevate the standard of the web so that the web can meet the international standard. The web should take into consideration that the design should be organised with plain and simple background so that the users will not complain that the design of the web confused them because of too many colours and differences in background.

  Those are the key components to evolve the organization to provide better services to target users. Therefore, the government should take into account of the components that the websites still lacked of.
o The website of Office of Vocational Education Commission

The website of Office of Vocational Education Commission meets some important criteria that are orientation to website or usability, currency and authority, bibliographic control, services, quality of links, feedback mechanisms, design and navigability. Nevertheless, privacy and accessibility were not implemented. As stated, privacy and accessibility are significant criteria to improve the quality of the web. Therefore, in order to improve the better quality of the web, the Office of Vocational Education Commission should try to implement privacy and accessibility. For example, the web should state the privacy policy clearly as well as should publish English version page. This will help the website to best meet the needs of their target users.

In conclusion, the websites of Office of Permanent Secretary for Education, Office of the National Education Council, Office of the Higher Education Commission in Thailand and Office of Vocational Education Commission implemented some key criteria that comply with the main website of Ministry of Education in Thailand. However, as discussed previously, the analysis of the results demonstrates that some significant components to evaluate e-Government websites were not implemented to the websites. Therefore, the results of this study may be applied so that the government can perceive which components that they need to implement to the websites and improve so as to best meet the needs of their target users.
5.1.3 What are the significant components for the effectiveness of Thai government websites need to be implemented in the area of education?

With reference to the analysis of the results, it shows that the significant components for the effectiveness of Thai government websites need to be applied in the area of education consist of orientation to website or usability, currency and authority, bibliographic control, services, privacy, quality of links, feedback mechanisms, accessibility, design and navigability. However, as discussed above, the website of Ministry of Education, Office of Permanent Secretary for Education, Office of the National Education Council, Office of the Higher Education Commission and Office of Vocational Education Commission still lacked some key criteria. The key criteria that those websites did not implement are mainly privacy, quality of links, feedback mechanisms, accessibility and design. Those governmental organisations should therefore scrutinize which criteria that they still lacked so that they can improve the effectiveness of e-Government website in order to best meet the need of their target users.

According to the analysis of the results, it can be concluded that the hypothesis that was addressed previously was true in terms of the vital components for the effectiveness of Thai government websites need to be implemented in the area of education composes of orientation to website or usability, currency and authority, bibliographic control, services, privacy, quality of links, feedback mechanisms, accessibility, design and navigability respectively.
Additionally, according to the second hypotheses that “Having the national standard of website will help to improve better services through the website of Ministry of Education.” It can be assumed from the analysis of the results that the key criteria to evaluate e-Government websites according to Cullen and Houghton (2000, p.247)’s research can be applied as a theoretical framework to enhance the effectiveness of the websites of Ministry of Education and relevant education agencies as well as to be implemented as the national standard of e-Government website.
CHAPTER 6
CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the conclusions of this study that has been conducted according to the research aims and objectives mentioned in Chapter 1. The recommendations are also addressed so that it will be beneficial for future research in relations to improve and implement e-Government websites in Thailand.

6.1 Conclusion

The context of this dissertation mainly highlights on the significant evaluation criteria of e-Government website in Thailand. By carrying out this research, the websites of Office of Permanent Secretary for Education, Office of the National Education Council, Office of the Higher Education Commission and Office of Vocational Education Commission were analysed because education is perceived as an important matter in order to develop the country. In order to improve the quality of e-Government websites in Thailand, those were therefore investigated, evaluated and observed by using qualitative research methodology. The conceptual framework was also established according to Cullen and Houghton (2000, p.247)’s research because this study has been applied and cited in many research regarding e-Government in other countries. The research is also generally accepted as an approach to evaluate e-Government website and thus it was used as the conceptual framework for this study to evaluate e-Government website in Thailand.

According to analysis of results, it can be concluded that the summary of key findings of this study is presented as follows:
1. Thai government need to initiate new policy to improve its websites by focusing on orientation to website or usability, currency and authority, bibliographic control, services, accessibility, design and navigability because those still lacked of the effectiveness comparing with other e-Government websites in the same region such as e-Government websites of Singapore.

2. Thai government need to be considering of the design of the websites and provision of information in terms of consistency in presentation.

3. Ministry of Education and the relevant organisations should attempt to improve feedback mechanisms to be easy to use and navigate.

4. Ministry of Education and the relevant organisations should take into consideration that privacy policy needs to be developed and published.

5. In terms of currency, “News” section should be currently updated on a regular basis. It is recommended that weekly update can be applied.

6. As a result of too many dead links found, the web developer of the government should concern about this problems and therefore resolve by using dead link checker to examine the problems.

7. Ministry of Education and the relevant organisations should take into account of the design of the websites by applying colours that are suitable and facilitate users. It is generally accepted that colours applied in the websites should not be too many shades so that it will not confused users.

8. Ministry of Education and the relevant organisations should concern about using banners on the webpages. It is recommended that the
banners should be at the bottom of the pages so that it will not confuse users.

9. Ministry of Education and the relevant organisations should provide a variety of formats of documents to be downloaded such as Word file, Excel file, etc.

10. It is evident that Ministry of Education and the relevant organisations should improve search box system to be more efficient to facilitate user to search.

11. It is evident that Ministry of Education and the relevant organisations should implement site map or index at least three levels of the hierarchy.

12. The website of Office of the Higher Education Commission that requires users to register to the website prior to giving feedback should take into consideration that the clear statement of registration needs to be addressed on the web so that the users can understand the reason why they need to register. This is to avoid any misunderstanding may occurred.

13. Ministry of Education and the relevant organisations should provide separation of main tab categorised by their target audiences such as pupils, parents and administrators.

14. The website of Office of the National Education Council that provides the functionality of search boxes should retrieve the whole range of documents across the website and the other relevant website. This function should be also effective and work in the same way.
15. Ministry of Education and the relevant organisations should apply satisfaction survey with the same standard.

16. In terms of accessibility, English version should be implemented to all websites and consistency is also needed.

17. The websites that did not provide English version should take into account of the translation the whole websites into English so as to meet the international standards as well as to facilitate foreigners who are interested in the educational information in Thailand.

18. The implementation of navigation options should be in line with the same national standard.

19. Ministry of Education should provide more services in terms of the educational information regarding education systems in Thailand, qualifications frameworks, financial assistance and scholarships. It should provide the effective links to other relevant organisations.

20. Hierarchical structures should implemented in order to improve the organization of the websites to be easy to navigate and facilitate the target audiences.

6.2 Limitations of the research

Due to time constraints and other limitations, this study will not use questionnaire or interview methods. It is argued that the criteria framework can effectively yield enough relevant and insightful data. It will thus provide enough evidence for discussion and analysis.
6.3 Recommendations for future research

This study has achieved the aims and objectives that has established previously. The conceptual framework also derived from the previous research that has been generally accepted internationally and cited by other relevant researches. Therefore, it can be suggested that this study will be beneficial for Thai government in order to implement e-Government websites. However, this study has been carried out by the research methodology that is observation as well as from the analysis by the researcher only. Thus, it is suggested that other research methodologies may support to find the differences in results. For further research, it would be ideal to conduct the research by other approaches such as interviewing and surveys. Additionally, it is recommended that heuristic evaluation approach can be applied so as to evaluate usability problems regarding interface design (Nielsen, 1994). This approach is generally accepted and cited in many researches in relations to e-Government. This approach deals with the users to be part of the evaluation as well as to evaluate e-Government websites according to usability criteria and therefore it can be recommended that this approach may yield different results.

Word count: 13,821 words


APPENDIX

1. The example of the website of Ministry of Education in Thailand

(http://www.moe.go.th/English)
2. The example of the website of Office of the Permanent Secretary of Education (http://www.ops.moe.go.th/home/)
3. The example of the website of Office of the National Education Council
4. The example of the website of Office of the Higher Education Commission (http://www.mua.go.th/)
5. The example of the website of Office of Vocational Education Commission (http://www.vec.go.th/)