KNOWLEDGE IN THE POLICY PROCESS: A CASE STUDY OF THE LANGUAGE-IN-EDUCATION POLICY IN MALAYSIA

Zuraidah Zaaba

Farida Ibrahim Mahmoud Ramadan

Haijon Gunggut

Ibianaflorinciliana Niane Anthony Aning

Katsuhiro Umemoto

Doctoral student**,** Japan Advanced Institute of Science & Technology(JAIST),Graduate School of Knowledge Science,

Ishikawa Japan

Lecturer, Faculty of Administrative Science and Policy Studies, Universiti Teknologi Mara, Malaysia.、Sabah branch

ABSTRACT

This case study examines the language-in-education policy in Malaysia in the context of teaching science and technology in English at higher education institutions. The language-in-education policy of teaching science and technology in English was initiated in 1993 at higher education institutions and extended to the primary and secondary levels in 2003. In 2009, however, the government announced that English for science and mathematics in the primary and secondary levels will gradually be phased out by 2012. This study focuses on the knowledge shared, utilized and created by policy makers during the policy-making process, in particular the agenda-setting and formulation stages. Our review of the relevant literature suggests that knowledge shared, utilized and created by policy makers in Malaysia is strongly influenced by the highly- centralized and bureaucratic top-down system. Different policy makers are influenced by their beliefs and values, and by various prominent individuals with competing ideologies and long-standing practices. Because the policy environment in Malaysia is highly centralized, a new idea must go through a complicated process of exchange and selection before it spreads through the policy environment, gets accepted by policy makers, and becomes part of an institutional agenda.

Keywords: language-in-education policy, knowledge sharing, knowledge utilization, knowledge creation, agenda-setting, policy process

Zuraidah Zaaba et al. Knowledge in the í   icops2010

1

INTRODUCTION

The literature about the links between knowledge and the public policy process is usually based on research findings. However, knowledge extracted from formal research is rarely utilized by the policy makers (Jones, 2009; Ferguson, Mchombu & Cummings, 2008; Ashford, Smith, Roger-Mark, Fikree & Yinger, 2006; Porter & Hicks 1995). Whereas, Radaelli (1995) explained knowledge as an independent variable that has complementary function as power in the policy process, knowledge is also viewed by policy analysts as being generated from multiple resources during the policy-making process.

This study focuses on the knowledge shared, utilized and created by policy makers during the policy-making process. We hope to answer questions about how policy is being made, including who the major stakeholders are, and to identify the problems of and in the policy- making process.

The focus of this paper is the link between knowledge and the policy-making process in the language-in-education policy in Malaysia. The context is teaching science and technology in English in the higher education institutions. The British colonial period until independence and the implementation period after 1993 are discussed, to analyze the progress of the policy from the knowledge sharing, utilization and creation perspectives.

The study is significant as it reveals why English continues to be a medium of instruction in the education system, even though the Malay language has been replacing English from 1967 onwards. It is widely believed that colonialism and globalization factors influence   public policy change and innovation in Malaysia.

This study adopted a two-pronged methodology. First, a literature review covered studies on knowledge links to policy process, English influence in language policy, and the language-in-education policy in Malaysia. Second, documents such as prominent newspapers in Malaysia, Malaysia Economic Planning Unit (EPU) documents, the Federal Constitution, ‑Wawasan 2020øand other relevant documents were studied.

This paper is organized into four sections. The first section presents the links between knowledge and the policy process. The second section presents language policy, in particular the emergence of English. The third section presents an analysis of the policy process in Malaysia, with focus on language-in-education policy. The final section discusses the

Zuraidah Zaaba et al. Knowledge in the í   icops2010

2

contribution of this paper and some of the implications of its findings.

KNOWLEDGE AND POLICY PROCESS

Introduction

Knowledge is about belief, commitment and action. It is a function of a particular stance, perspective or intention. Knowledge is comprised of tacit and explicit; formal and informal (Nonaka & Takeuchi, 1995). These statements reflect the complexity of knowledge.

Western philosophers view knowledge as explicitô something formal and systematic. It can be articulated, codified and stored. Once consumed, the knowledge is transmitted to others. For Japanese companies, knowledge is both explicit and tacit (Nonaka & Takeuchi, 1995). Tacit knowledge is difficult to transfer. It is in the mind of the individual that knowledge turns into wisdom, intuition, experience, talent, judgment, and expertise. It is also implicit, a previous experience embedded in mind, aiding the improvement of all action (Curley & Kivowitz, 2004). Knowledge is know-how, applied information, influence with judgement, expressed in action, decision making and innovation (McNabb, 2007; Curley & Kivowitz, 2004; Nonaka & Takeuchi 1995).

As for policy, Anderson said it is a purposive course of action by an actor or set of actors in dealing with public matters of concern (Lester & Stewart, 2000, p.4). For Ranney, policy is a selected line of action or declared intent while Dye defined it as what governments do, why they do it and what difference it makes (Lester & Stewart, 2000). The focus of this paper is public policy.

Public policy is a process or series or pattern of governmental activities or decisions that are designed to remedy some public problem either real or imagined. It is a form implemented and evaluated by authorities in a political system (Lester and Stewart, 2000,p.4).

Policy process involves knowledge sharing, utilization and creation. However, knowledge is only productive with management responsibility (Drucker, 1994). Therefore there is a need to define knowledge management, since it is about the management of these three processes.

Management of knowledge

Knowledge management in the organization, focuses on knowledge sharing, knowledge acquisition and knowledge utilization (McNabb, 2007; Tiwana, 2002). The three

Zuraidah Zaaba et al. Knowledge in the í   icops2010

3

processes in knowledge management are the catalysts of knowledge creation. Knowledge sharing is disseminating and is allowing easy access to knowledge for all bodies and individuals in the organization. Conferences, meetings, media announcements and communities of practice are some examples of venues where knowledge can be shared. Knowledge acquisition means developing and creating intellectual capital that includes internal and external knowledge, for example insights, skills, experience and relationships. Knowledge utilization occurs when the knowledge is applied (Drucker, 1994). This process is achieved when knowledge is available at the right place and at the right time.

Knowledge is created internally and externally. Internally, an environment fosters supports and sustains organization knowledge whenever it arises. Externally, knowledge is based on the success stories of other organizations or countries. Knowledge can only be achieved, when knowledge is generated, for example through formal group discussion and informal discussion through social networks. These approaches allow connections among individuals to create new ideas. The individuals can be within or outside organizations or countries. This process is continuous, as displayed in SECI model[1] （Figure 1）. In reality, knowledge creation is much more complicated. This process is not only in the form of a spiral. Therefore SECI model is one form of model to explain the knowledge created in the policy process
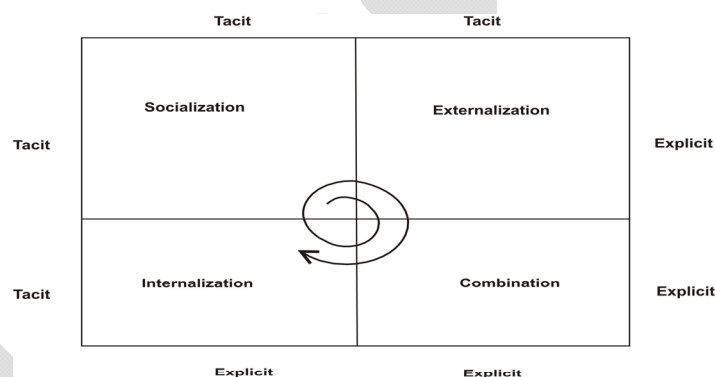
Tacit   Tacit

Tacit | Internalization | Combination | Explicit

Explicit   Explicit

Figure 1: SECI model (adapted from Nonaka & Takeuchi, 1995 & 2004)

Knowledge in the Policy Process

Recently, scholars have emphasized the role of knowledge in the policy process,

---

[1] SECI Model was developed by Nonaka and Takeuchi (1995). S: socialization -tacit knowledge to tacit knowledge. Then from tacit knowledge to explicit knowledge (E: means externalization). The following process is C: combination of explicit knowledge to explicit knowledge. The 4 step cycle ends with I: internalization of explicit knowledge to tacit knowledge. This process is continued in the form of a spiral.

Zuraidah Zaaba et al. Knowledge in the í   icops2010

especially in the domain of public policy. The different theoretical approaches have shared the belief that a **k**nowledge perspective on the policy process provides many advantages (Radaelli, 1995).

Radaelli (1995) highlighted findings by Heclo (1974), Heclo and Wildavsky (1974) and King (1973) that knowledge is an independent and highly significant variable in the investigation of the policy process. Research in knowledge utilization and evaluation, epistemic communities, studies in the diffusion of economic paradigms, agendaósetting and policy change and learning, are the approaches which constitute a ÷knowledge perspectiveøon the policy process (Radaelli, 1995).

Some scholars view knowledge positively in the policy process. They use metaphors, for example ÷evolutionø (Haas, 1992) and ÷learningø (Heclo, 1974; Sabatier & Jenkins-Smith, 1993), whereas some scholars view knowledge negatively. They used metaphors such as ÷Unending social enquiryø Lindblom (1990), ÷collective puzzlementø (Heclo, 1974) and ÷garbage-can with policy windowsø(Kingdon, 1984).

Pollard and Court (2005) elaborated that knowledge occurs in all public policy processes. It is found in agenda-setting, policy formulation, policy implementation and evaluation.[2] Knowledge is useful when knowledge sharing, utilization and creation occur at the right time and at the right location. Knowledge of the economy for example is useful when the world is experiencing economic crisis, and basic economics is not sufficient anymore. External Knowledge adaptation to local settings allows more comprehension and a greater sense of responsibility of the policy makers (Fergusson et al, 2008). Synthesis of external knowledge, for example global knowledge economy and internal knowledge, for example local knowledge economy creates appropriate agenda-setting in addressing issues. Formulation and implementation of policies becomes more effective and efficient. As for the evaluation stage, it is important to have a feedback system that can be referred to in the learning process, and in any continuous improvement process on the current policy.

Knowledge and Policy making in developing countries

In developing countries, the knowledge link to the policy process is widely studied in the development domain (Jones, 2009; Fergusson et al, 2008; Pollard & Court, 2005; Porter &

---

[2] It is noted that a linear policy process is ideally a frame to assist in policy analysis, whereas in reality it is more complex.

Zuraidah Zaaba et al. Knowledge in the í   icops2010

5

Hicks, 1995). The main focus is on the importance of research in policy-making.[3] Hezri did a study on the sustainability indicator system and policy process in Malaysia. He elaborated that there are implementation constraints in the policy-making process in Malaysia, consisting of meta-policy issues, technical issues, communication issues and theoretical constraints, as constraints to knowledge sharing, utilization and creation within the policy process in Malaysia. He put forward a framework of utilization and learning as an option to overcome the implementation constraints.

Policy-making activity is often active during crises; either domestic or external crises. Nevertheless, during both crises and stable situations, the policy-making for innovation or change is greatly influenced by the interests and convictions of political entrepreneurs who hold positions in the policy-making (Horowitz, 1989). The top-down approach that is still practiced by many developing countries reflects the interests of the authorities in public policy. In addition, international relations in terms of aid, and political, economic and social influences would also be reflected in the public policy of the developing countries.

Ashford, Smith, Roger-Mark, Fikree and Yinger (2006) explain that the policy process is complicated, and policy makers draw information from various resources. In addition, different policy makers are influenced by their beliefs and values, and by various prominent individuals with competing ideologies and long-standing practices. Because the policy environment in developing countries, for example, Malaysia is highly centralized, a new idea must go through a complicated process of exchange and selection before it spreads through the policy environment, gets accepted by policy makers, and becomes part of an institutional agenda.

The current Policy making process in Malaysia（*Commonwealth Secretariat, 2004*）

Policy making process in Malaysia begins with agenda-setting and policy formulation simultaneously. A new policy is initiated by the appropriate minister. A Cabinet paper containing the rationale and need for a policy will be compiled by the ministry. ThiS paper is circulated to the ministries and departments for comments. The feedback would be incorporated into the Cabinet paper prepared by the ministry, which is sent to the Cabinet Division (a division of the Prime Minister's Department, which functions as a secretariat to the Cabinet). The Cabinet Division would prepare copies for circulation at the Cabinet meeting (consisting of all the ministers for the federal government[4] with the authority to

---

[3] The United Nations organization and non governmental organizations of the developed countries are the organizations that are doing this research.

[4] Malaysia has three levels of government. The highest level is the federal government, followed by state government and finally the local

Zuraidah Zaaba et al. Knowledge in the í   icops2010

6

consider and endorse government policies).

Policy presentation and exchange of information between the government and the public is the responsibility of the Department of Information. They also acquire feedback from the public and persuade the public to accept and participate in the government policies. The communication is in the form of seminars, documentaries, dialogue sessions, lectures and film shows. Mass communication is used for a more widespread communication with the public. It serves as a means of publicity, announcement, awareness and providing information. The Malaysian Civil Service Link (MCSL) provides a single main gateway linking to all government websites and providing access to government information and various government policies.

The Implementation and Coordination Unit (ICU) of the Prime Minister's department monitors the implementation program components. Policy evaluation is undertaken by the Macro and Evaluation Division of the Economic Planning Unit (ECU) of the Prime Minister's Department. It evaluates the impact of government policies on the quality of life and the country as the whole.

From agenda-setting, policy formulation, policy implementation and policy evaluation not all the stakeholders are involved. Policy-making takes place at the Federal government level[5] （Figure 3） only. National issues for example education and defense issues are of Federal jurisdiction. This creates problems in the public policy-making process.

Federal Government
↓
State Government
↓
Local Government

Figure 2: The government system in Malaysia

Malaysia policy-making is a combination of liberal and procedural types. The concentration of power is at the higher level of government. The Federal government makes policy to bring about social change for the whole country, for example, language policy and

---

government. The federal government authority is concerned with on the federal matters, the state governments (13 states) have authority only on the respective state matters. The local government has no authority except on local issues..

Zuraidah Zaaba et al. Knowledge in the í   icops2010

7

economic policy. The Federal government also set guidelines on how something to be done and who is responsible to take action.

LANGUAGE POLICY

Post World War II language policy

In the period after World War II, there was a new emergence of international governmental structures and operational rules; English, French and Russian were declared to be the official languages of science information, and only the United States (US) was a major industrial power with its scientific and educational infrastructure completely intact. And most of the colonial countries were ruled by English-speaking countries.

These developments influence the great majority of the world's population at present to continue to choose English as the first or alternative language (Kaplan, 1993, Kaplan & Baldauf, 1997). The independent developing countries, especially the ex-British colonies, preferred to use English as the main or one of their official languages because of unity and economic development.

The leaders of the developing countries, whose populations are multi-ethnic and multi-lingual believe that English as the official language during the colonial period did unite the country at that time. The continuation would maintain unity even after independence. In India, Pakistan and Bangladesh after independence, English has retained its status and has continued to be the medium of instruction for the elite and in the higher education institutions.

The world economy is still dominated by the English speaking countries. In countries such as Singapore, their language policies allow the country to participate in global capitalism, and place the country as a leader in the global economy. In Brunei, English has been a working language and a medium of instruction in education. (Tsui & Tollefson, 2007).

Another different view; with English as the official language, the colonial-educated elites who still rule the countries after independence, believe that with this language policy they can remain in power (Brown, M.E. & Ganguly, 2003; Kaplan & Baldauf , 1997; Kaplan, B.K. 2001; Shohamy, 2006).

This is achieved as the independence developing countries continue to adopt

Zuraidah Zaaba et al. Knowledge in the í   icops2010

8

top-down approach. The knowledge shared among the policy makers refers to the world scenario and their values, beliefs and experiences during colonialism. As a result, knowledge utilized among the policy makers is their selected external knowledge and their beliefs and experiences. The highly centralized policy-making process allows countries, especially the British ex-colonial countries, to legitimize the implementation of English as the medium of instruction through their language-in-education policy. The evaluation of the effect of the implementation is insignificant if the top-down approach continues by the current government.

Outside sources of funding also have direct impact on language policies in education for developing countries. Financial assistance from English-speaking countries to countries like Cambodia, Vietnam, Nepal and developing countries which are still struggling against poverty and illiteracy, have played a critical role in shaping their language policies.

A rich non-English-speaking country like Japan developed its Japanese Institute for Science and Technology (JIST)[6]. JIST allows knowledge of the world to flow into the national environment to be shared, utilized and created in the local setting.[7] The government directed Japanese research universities to assume certain projects deemed critical to national development, and used a variety of other strategies to achieve the widest possible access to information .

As for Saudi Arabia, it sends its technocrats to study at the tertiary institutions in the UK and the US. Once the technocrats return back to their country, they are among the individuals involved in the development of the educational sector of the country. They are able to share and to utilize their knowledge gained while in the US and UK, and this has created high prestige of the educational sector, especially in science and technology.

Although most educational policies continued until now to be national decisions, language policy-making is also internationalized, and the challenges are related to sociopolitical, economic and cultural impacts for developing countries. The foreign presence after independence is both resisted and accommodated in ways that shaped the countriesø language policies.

---

[6] JIST bought computers and sent bibliographic specialists to developed countries to learn how to access and use information systems. It created a translation facility and developed university-industry links.
[7] The core of the Japanese government strategy was the development of an extremely effective and efficient translating system. In the early years, they committed a huge fraction of their GNP in the early years of the development of scientific and technical information management systems in Japan.

Zuraidah Zaaba et al. Knowledge in the í   icops2010

9

...í .. By the year 2000 it is estimated that over one billion people will be learning English. English is the main language in.í í í . international business and academic conferences, science and technology, diplomacy, sports, international competitions, í .. and advertising.

(Graddol, 1997,p.2)

Globalization

Globalization has made English a global language. This spread of English has posed a serious challenge to non-English-speaking countries (Tsui & Tollefson, 2007). The actions taken were to increase and improve language education as part of broad economic development, and English promotion policies have gradually begun to dominate educational language policies in many countries in the world (Tollefson, 2002). In response to Tollefson, this reflects that globalization is actually an extension of colonialism. English language, does not just continue to be widely used in the British ex colonies, but is also spreading to other countries like non British ex-colonial countries and European countries.

Ammon and McConnelløs work (2002) evidently showed wide use of English as the language of university teaching for European countries for example Germany and Denmark. These countriesømain intentions are to attract more foreign students and staff to come to their countries, and to ensure their own students and professors are proficient in foreign languages, especially English for active involvement in globalization, in order to guarantee the proliferation of comprehensive scientific and economic international relations.

For most of the developing countries, knowledge shared, utilized and created for their language policy is greatly influenced by the external forces that were embedded in their government system and laws during and after colonialism, because the individuals in the government, base their beliefs, values and wisdom are greatly rationally bounded within the system and laws.

EDUCATION POLICY IN MALAYSIA

Colonial period

Zuraidah Zaaba et al. Knowledge in the í   icops2010

10

Since it was a British colony, English in Malaysia was already associated with power and prestige (Chan & Tan, 2006). During the colonial period, this was further reinforced by the English schools located in the urban areas where the English, the non-Malays (mostly Chinese businessmen and a few Indians) and Malay elite[8] enrolled in the schools. The schools also gave opportunity for further education, employment in the government and access to scholarships.

The British government, however, allowed vernacular schools[9] to cater to the ethnic communities. Malaya's population was a multiethnic society—Malay, Chinese, Indian and indigenous. The vernacular schools (excluding Chinese schools which were managed by the Chinese community) during the British colonial only produced literate farmers, carpenters and small business owners.

On the eve of independence, British formed the Barnes committee. The Barnes Report recommended a national school system, for 6 years at the primary education level in two languages i.e. Malay and English language. This system would ensure English language would continue to be one of the official languages and over a period of time, the need to have separate schools in Chinese and Tamil would slowly disappear. The community agreed with Malay being treated as the principal language, but they felt that there should be some provisions to acknowledge Chinese and Tamil as part of important components of a new definition of Malaya's national identity. As a result, the British government proposed, the "three languages solution" in Tamil and Chinese schools (either Tamil-Malay-English or Chinese-Malay-English). By recommending a common curriculum for all schools, the national school system would eventually evolve. However, Barnes report was opposed by the Chinese and Tamil communities.

Policy-making process during the colonial period clearly showed the agenda-setting decision channeled through ethnic leaders. Objections from the Chinese and Indian communities replaced Barnes Committee with Razak Committee. The Razak Report endorsed Malay language (national language) as the medium of instruction for the national schools. This report was incorporated in 1957 Education Act. There was no opposition from the

---

[8] Royals, aristocrats and Malay chieftains.

[9] The Chinese community established their own Chinese schools. The school curriculum was based on that of mainland China. The Malay school was based on religious teaching, and the Tamil schools were based on curriculum from India. There was also Malay system of education at the primary level. The Malay system of education was compulsory; this support for Malay education was due to the fact that the British felt an obligation towards Malays as 'sons of the soil' (encompassing Malays, aborigines (an indigenous minority in Malaya) and the indigenous peoples of Sabah and Sarawak). Then there was the English school. All the schools functioned at the primary level, and only English extended to secondary and tertiary level. The Chinese could still pursue education in a private Chinese higher education institution.

Zuraidah Zaaba et al. Knowledge in the …   icops2010

11

Chinese community, since the vernacular schools (Chinese and Indian) which were described as national-types schools, still continued to respect community sentiment.

Early independence

The direction of language policy was toward the national sentiment, since the new independent government was predominantly ruled by the Malay leaders, even though the ruling party was an alliance of 3 major parties. The Alliance consisted of UMNO (United Malays National Organization), MCA (Malaysian Chinese Association) and MIC (Malaysian Indian Congress).

To Malay leaders, Malay language was the best choice, because Malays are the majority in Malaysia and also because of its role as a lingua franca, its position as the main interethnic communication tool before and after independence, its possession of high literature, and its previous use as a language of diplomacy and administration in the Malay archipelago (Omar, 1979 & 1987).

This belief was explicitly incorporated in the Federal Constitution[10]. Malay language as the national and official language, and Malaysø rights were secured since independence in 1957. To ensure that the Malay language was widely accepted, it was mandated for a wide range of activities, including media, government and most importantly, education.

However, English was allowed to share official language status with Malay for a period of ten years (1957-1967). This was a period to be used to develop Malay language materials containing explicit knowledge in the form of textbooks, terminologies and translations (Vikor, 1988). In 1956, Dewan Bahasa dan Pustaka was established as the language agency, which was responsible for corpus planning. The agency was to develop and enrich the national language[11] (Omar, 1979). This agencyø goal was to ensure that Malay language would develop and be able to cope with the sociological development of Malaysia.

The transition from English to Malay was slow in the education system, which allowed the continuation of the English system of education along with the Malay system of education and the vernacular system of education. As a result, the belief shared during the colonial period that English was associated with power, prestige and opportunity, was still utilized and recreated in the early period of independence.

---

[10] The highest law in Malaysia.
[11] Standardize spelling and pronunciation, and coin appropriate technical terms in the national language.

Zuraidah Zaaba et al. Knowledge in the í   icops2010

12

The English-educated Malaysians continued to find employment in the public and private sectors. The Chinese-educated Malaysians were involved in the business sector. The Malay-educated students either worked as teachers or continued their ancestorsø work. The Indian-educated students worked in the rubber plantations.

The outcome of this situation led to wide income disparity among the three ethnic groups, and between urban and rural areas. Despite all the evidence, the government only seriously began implementing the transition from English to Malay in the education system in 1970, only after 1969 election[12].

The policy process during the early independence period reflected that knowledge sharing, utilization and creation only evolved among the government leaders. What really happened at the societal level was only taken seriously by the government leaders when the public, exercised their electoral rights and there was racial riots in 1969. The Alliance party did not win election in most of the main cities in Malaysia[13]. This displayed that knowledge is subordinate to the policy makersø interests, and societyøs best interests would only be important if they coincided with the policy makersøinterest.

In 1969, a declaration of a state of national emergency led to a suspension of parliament, and the National Operation Council governed the country from 1969 to 1971. The outcome after 1969 was a transition from English to Malay at all levels of the education system. The transition only affected all English schools and some Chinese and Indian schools. There are still vernacular schools until present. There was no link between the education sector and the industrial sector, as the Japanese government, it did develop university-industry links to ensure that Japanese language would contribute to the national development.

In addition, more aggressive affirmative action policies were created. New Economic Policy and racial quota for public university enrollment were examples of affirmative actions to address income imbalance, and emphasizing development for the Malays (since many Malays standard of living is still low) began in 1970. This year was the beginning of public policies in Malaysia being directly or indirectly linked to economic policy. At this stage, internal crisis influenced the direction of policy-making, and foreign economic approach was applied to resolve the problems. The foreign approach, however, would not

---

[12] The alliance in Peninsular Malaysia consisted of the UMNO, MCA and MIC political parties, who lost most of their constituency to DAP. This led to riots between the Chinese and Malays.
[13]The second election after Malaysia independence 1957.

Zuraidah Zaaba et al. Knowledge in the í   icops2010

13

resolve problems if it was not adapted to local settings.

Public higher education institutions 1960s-1980s

University of Malaya (UM), which was set up during the colonial period, still continues teaching all courses in English except those in Malay, Chinese and Indian studies since independence in 1957. In 1965 UM and the Ministry of Education formed an examination board for admission examinations to be conducted in Malay. In 1965, the first entering class of Malay-speaking students was admitted into UM. The transition was gradual, science courses were still in English. The Faculty of Arts[14] and the Faculty of Economics and Administration[15] conducted their courses in both languages.

There was a need to set up more public universities in order for Malay to replace English as the medium of instruction at the higher education institutions by 1983. In 1970, the National University of Malaysia was formed, followed by the University of Technology Malaysia, University of Agriculture Malaysia and the Science University of Malaysia.

Three new universities used Malay as the medium of instruction, while UM and Science University of Malaysia largely used English. The reason the two universities continued to use English as a medium of instruction was stated in Malaysia's second five-year plan (1970-1975)[16] õí .This acceptance of a foreign language, particularly the English language, was meant to promote the development of the nation via science and technologyö (cited in Omar, 1979).

The reemergence of English as a language for science and technology in Malaysia

The implementation process of conversion from English to Malay had reached the state that from 1988 onwards, for university entrance, a credit in English was not required, and in 1995 English was removed from the list of compulsory subjects to obtain the *Secondary School Leaving Certificate* [17] . English syllabus gradually focused on communicative skill. As Malay continues to have strength in national education, these changes led to the decline in mastery of the English language by Malaysians.

This scenario became a barrier for graduates from public higher education

---

[14]English for lectures and Malay for tutorials.

[15] English was for English-speaking students and Malay was for Malay-speaking students.

[16] Malaysia's five-year development plan. In 1971 a National Economic Policy was introduced. The five year plans continued until 1990.

[17] This examination is conducted in the fifth year of secondary school

Zuraidah Zaaba et al. Knowledge in the í   icops2010

14

institutions to seek jobs in the workforce, where the public sector is shrinking and the private sector is expanding due to the privatization policy. Beyond the borders of the national education sector, English language is still widely used. This created a new problem. The government needed to create an effective language-in-education policy to overcome the increasing unemployment of graduates from the public universities. It was taken seriously when Malaysia industries were suffering from the world economic crisis in the end of 1980s and early 1990s.

In 1993, the Prime Minister (Mahathir Mohamad) announced that the teaching of science in English in universities and colleges (Jacobson, 2001). This was not a new language policy, but to reinforce the ex-British colony belief that English is associated with prestige and power. The difference is that English is considered as a global language. The implementation was similar to 1970s to 1980s approach. Only the transition was from Malay to English and it was more rapid. National University of Malaysia 2004/2005 academic session began using English for all science and technology courses (Gill, 2006). Malaysia University English Test (MUET) was the requirement to enroll in higher education institutions. The private higher education institutions however, preferred IELTS or TOEFL for transnational programs[18].

In 1995 a guideline was issued by the Ministry of Education, allowing the use of English in tutorials, seminars, assignments, foreign language classes and other similar activities. This resurgence is a means to advance in scientific and technological matters, and to assist Malaysia in its quest of becoming a global community, in order to achieve Malaysian Vision 2020 (an idea by the then Prime Minister) which envisions Malaysia as an industrialized nation (Jacobson, 2001).

However in 1997, the Asian economic crisis hit Malaysia. Instead of continuing to create a better implementation of teaching science and technology in English for public higher education institutions, the government created a new policy to assist those who could not afford to study abroad (Wong & James, 2001). The new policy was the set up of private higher education institutions. The government realized that private education flourished through freedom to select the medium of instruction. The private educational sector was largely driven by funding from corporations and wealthy individuals.

To legitimize the freedom, the Education Act 1996 and the 1996 Private Higher Education Institution Act were introduced. The former approved the use of English as

---

[18] Transnational programs include twinning programs or dual degree, credit transfer programs, external degree programs and distance learning programs.

Zuraidah Zaaba et al. Knowledge in the í   icops2010

15

medium of instruction for technical areas and postsecondary courses, and the latter allowed the use of English in dual programs with overseas institutions and offshore campus situations. The Education Act 1996 also included the point that Malay would be a compulsory subject in private education institutions, if the medium of instruction was other than the national language.

The liberalization of higher education policies led to two streams of higher education: public universities with medium of instruction in Malay (except science and technology courses), and private universities with English as medium of instruction. The private universities are expensive, so enrollment is mostly middle class and Chinese. The public universities are subsidized by the government, so the enrollment is mostly working class group and Malays. This has divided the country along socioeconomic lines and ethnic lines. The public university graduates are disadvantaged seeking employment in the private sector because of lack of competence in English. In 2002 there were about 44000 university graduates unemployed (Gill, 2004; Chan & Tan, 2006). Instead of referring back to the 1993 policy for teaching science and technology in English for higher education institutions, the government announced the implementation of teaching science and mathematics in English at the primary and secondary levels of education in 2003. And in 2004 Ministry of Higher Education was formed to manage the higher education institutions.

The policy-making process regarding the language of instruction is a combination of educational, social, political, and economic participation, social equality and human rights. õAs ideological constructs, policies often reflect the interest of groups that dominate the state policy making apparatus, and they reproduce unequal relationships of power within the larger societyö (Tollefson & Tsui, 2004, p.284). This statement is proven by the fact that the Malaysian government announced the phasing out of teaching mathematics and science in English at the primary and secondary levels by 2012 (Utusan Malaysia, 2009 July, 8).

Analysis of 1993 teaching science and technology in English policy in the higher education institutions

The cabinet, in 1993, endorsed teaching science and technology in English in the higher education institutions. There was no systematic planning, only an announcement from the Prime Minister (Mahathir Mohamad).The initial policy was to address the problem of unemployed graduates who are unable to seek employment because of their main inability to speak English. Presently, the matter has not been resolved. Federation of Malaysian

Zuraidah Zaaba et al. Knowledge in the í   icops2010

16

Manufacturers did a survey that confirmed that the inability to speak English is one of the main reasons for graduatesøunsuccessful attempt to seek employment (Utusan Malaysia, 2010 February, 27).

This problem can be attributed to the fact that the higher education institutions were not involved in the decision making. They, however, were accountable to implement the policy. As a result, the universities only adapted to the previous approach, converting from Malay to English for science and technology courses. They did not create their own strategies and hence there was no evaluation of the outcome of the policy. Even if evaluation was being done, the information would not be fed back to the policy makers. As mentioned, earlier, ECU division is responsible for the evaluation of government policies.

After the announcement, the government only dealt with the legality of the policy, the 1995 guidelines and 1996 education act for public and private higher education institution. In 1997 the Asian economic crisis prevented Malaysians from studying abroad, which has made government focus on the development of the private higher education institutions. The policy process is summarized in figure 3.
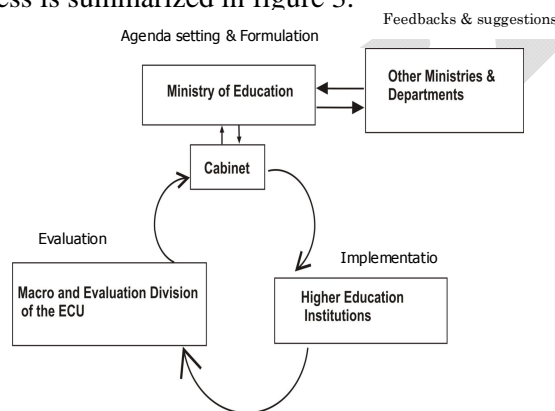

Figure 3: A Summary of Policy process of Teaching Science and Technology in English for Higher Education Institutions (1993)

In 1998 there were 12 private higher education institutions. The focus has turned government attention to liberation of the higher education institutions, resulting in more private involvement and coporatization of public higher education institutions. In 1998, the public higher education institutions also had to implement the new corporatization policy.

The policy-making process, applying top-down approach from the Federal government level has made policies that do not address the real problems and interests of Malaysians as a whole. The stakeholders in the policy-making do not represent all of society. The meta-policy (policy

Zuraidah Zaaba et al. Knowledge in the í   icops2010

17

on how to make policy) itself is the problem in the policy process in Malaysia.

In 1993, teaching science and technology in English for higher education institution only changed the medium of instruction from Malay to English. In 1996, Private Education Act allowing English to be used as the medium of instruction in private higher education institutions, and, 1996 Education Act legitimized the use of English in science and technology courses for Public higher education institutions. 2003 marked the beginning of the implementation teaching science and mathematics in English for all primary and secondary education. This has not improved the public universitiesø graduatesø proficiency in English. All these policies have not solved the problem.

The absence of knowledge management from the policy process could be the contributing factor. Effective knowledge sharing, utilization and creation cannot happen because not all stakeholders are involved in the policy-making. Policy makers only utilize the beliefs, values and interests of the individuals responsible for the policy. Government can rectify these problems by including all the stakeholdersø knowledge in the database. The database must be managed efficiently and effectively for policy makers to ensure the policy process can produce public policy which will benefit all Malaysians.

CONCLUSION

This paper discusses knowledge sharing, utilization and creation in the policy process. Language-in-education policy in Malaysia was selected as a case study. The focus is on the context of teaching science and technology in English in higher education institutions in Malaysia. The discussion covers the knowledge domains, identities how knowledge is being made, who the stakeholders are and what problems still remain in the policy-making.

The discussion begins with the link of knowledge to the policy process, and language policy in developing countries. In the second part, from the perspective of knowledge, an analysis has been performed on the language policy in Malaysia from the colonial period to the implementation of teaching science and technology in English in the higher education institutions.

In conclusion, this paper highlights the continuous influence of colonial policy on the language policy in Malaysia until present and the continuing importance of English, even

Zuraidah Zaaba et al. Knowledge in the í   icops2010

18

though Malay language is the national and official language. However, the public voice was taken seriously by the policy makers during the colonial period. Barnes committee fell through due to the Chinese and Indian communitiesø disapproval of the idea of trilingual schools.

After independence, the ethnic group which led the political sphere shaped the public policy. For examples, the medium of instruction for national education became Malay and affirmative action policies were implemented. As the economy began globalization, economic factors gradually shaped the public policies. The implementation of teaching science and technology in English in higher education institutions in Malaysia is a case in point. The initial idea of reintroducing teaching science and technology courses in English took hold because public universitiesø graduatesø inability to converse in English, hindered them from securing a job in the expanding private sector.

After independence also, public voice can only exercise influence on public policies, in particular language policy through electoral decisions. In 1969, the response to the election result, led to the governmentøs systematic transition from English language to Malay language, and emphasis affirmative action to reduce the income disparity among the ethnics group especially the Malay and the indigenous. In 2008, the National Front party which ruled the country since 1970 failed to secure two thirds of the votes in the parliament. Since 2008, mass communication has been widely utilized by the public and by ministers, and peaceful demonstrations by political parties, interest groups and non-governmental organizations have been held to express their opinions to influence government policies.

In 2009, a big rally was held to protest against the use of English for science and mathematics in the primary and secondary education, and with the change of leadership, the focus has been on addressing the effectiveness of the language policy. It was decided that the teaching of science and mathematics in English at the basic educational level will be phased out by 2012. The government plan is to improve the teaching of English at the primary and secondary levels to ensure that the implementation of teaching science and technology in English at the higher education institutions will become more effective. At the initial stage, the Minister of Education signed a Memorandum of Understanding with Edith Cowan of West Australia for curriculum building and training of teachers (Utusan Malaysia, 2009 August, 8). In addition, qualified and experienced foreign teachers, English laboratories and books are in place (Utusan Malaysia, 2009 August, 9).

Zuraidah Zaaba et al. Knowledge in the í   icops2010

19

The current policy making evidently reflects that the meta-policy is using top-down approach and is being made at the Federal government only. The agenda-setting and policy formulation are only occurring at the cabinet level of the Federal government. This restricts policy matters to the involvement of leaders, politicians and economists at the Federal level only, leaving out the other two government levels. The public policies, for example language policy and economic policy, do not complement each other. Rather the language policy has until now supported the economic policy. The implementation process is the responsibility of the frontline civil servants, and the policy evaluation is the responsibility of a division of the Economic Planning Unit. The current policy-making system clearly prevents knowledge sharing, utilization and creation approaches. Therefore, there is a need to address this matter seriously from the knowledge management perspective. The management of the knowledge of all the stakeholders can improve knowledge sharing, utilization and creation in the policy-making process.

Out future work will continue to review literature on basic policy, and policies related to language, economics, culture, society and politics, along with continuing review of relevant documents. And field research on policy process in Malaysia is needed in order to clarify the meta-policy in Malaysia. Doing field work on language-in-education policy in Malaysia would be the initial stage to understand knowledge in the policy process. The findings may help to improve the language education policy in Malaysia.

REFERENCES

A Profile of the Public Service of Malaysia. (2004). London: Commonwealth Secretariat.

Ammon, U. (Ed.) (2001). *The Dominance of English as a Language of Science: Effects on Other Languages and Language Communities*. Berlin: Mouton de Gruyter.

Ammon, U. & McConnell, G. (2002). *English as an Academic language in Europe*. Germany: Peter Lang.

Ashford, L. R., Smith, R. R., Roger-Mark, D. S., Fikree, F. F., Yinger, N.V. (2006). Creating windows of opportunity for policy change: Incorporating evidence into decentralized planning in Kenya. *Bulletin of the World Health Organisation*, 84(8), 669-672.

Barnes Report. http://en.wikipedia.org/wiki/Barnes_Report.

Brown, M.E. & Ganguly, S. (2003). *Fighting Words: Language Policy and Ethnic Relations in Asia*. Cambridge: Belfar Center for Science and International Affairs.

Chan, S.H. & Tan, H. (2006). English for Mathematics and Science: Current Malaysia Language-in-Education Policies and Practices. *Language and Education*, 20(4), 306-321.

Zuraidah Zaaba et al. Knowledge in the í   icops2010

20

Crystal, D. (2003). *English as a Global Language,* 2nd ed. Cambridge: Cambridge University Press.

Curley, F. C. & Kivowitz, B. (2004). *The Manager's Pocket Guide to: Knowledge Management*. Mumbai: Jaico..

Drucker, P. (1993). *Post-Capitalist Society*. New York: HarperBusiness..

Economic Planning Unit. http://www.epu.gov.my.

Ferguson, J.E. , Mchombu, K. & Cummings, S. (March 2008). Meta-review and scoping study of the management of knowledge for development. *IKM Working Paper No 1*. http://www.ikmemergent.net/pdf/. Accessed 21 February 2010.

Gill, S.K. (2002). *International Communication: English Language Challenges for Malaysia*. Serdang, Selangor: Universiti Putra Malaysia Press.

Gill, S.K. (2003). Language Policy and Planning in Higher Education in Malaysia: A Nation in Linguistic Transition. http://ccat.sas.upenn.edu/plc/clpp/proposal/saranMalaysia.htm. Accessed 28 January 2009.

Gill, S.K. (2004). Medium-of-Instruction Policy in Higher Education in Malaysia: Nationalism Versus Internationalisation. In Tollefson, J.W. & Tsui, A.B.M. (Eds.) (2004). *Medium of Instruction Policies: Which agenda? Whose agenda?* (pp. 135-151). New Jersey: Lawrence Erlbaum Associates.

Gill, S.K. (2005a). Medium of Instruction Change in Higher Education in Malaysia: The Reality of Attitudes and Implementation. Paper is based on a keynote address presented at the International Conference on õTeaching English in Asia 1ö Organised by Universiti Utara Malaysia on November 14-16th, 2005.

Gill, S.K. (2005b). Language Policy in Malaysia: Reversing Direction. *Language Policy*, 4, pp.241-260.

Gill, S.K. (2006). Change in Language Policy in Malaysia: The Reality of Implementation in Public Universities. *Current Issues in Language Planning*, 7(1), 82-94. http://66.102.1.104/scholar?hl=ja&lr=&q=cache:3vT8v2bF9hQJ:www.channelviewpublications.net/clip/007/0082/cilp0070082.pd. Accessed 5 February 2009.

Gill, S.K. (2007). Shift in Language Policy in Malaysia: Unraveling reasons for change, conflict and compromise in mother-tongue education, *AILA Review,* 20, pp.106-122.

Grabe, W. & Kaplan, R.B. (1986). Science, Technology, Language, and Information: Implications for language and language-in-education planning. *International Journal of the Sociology of Language*, 59, pp.47-71.

Graddol, D. (1997). *The Future of English*? London: British Council.

Guna Pakar B. Inggeris Australia di Malaysia. August 8 (2009). *Utusan Malaysia*. Arkives Utusan online. http://ww.utusan.com.my. Accessed 10 August 2009.

Hashim, A. (2003). Language Policies and Language Education Issues in Malaysia. In

Zuraidah Zaaba et al. Knowledge in the í   icops2010

21

Lindsay, J. & Tan, Y.Y. (Eds.), *Babel or Behemoth: Language Trends In Asia (Asia Trends 1)* (pp. 93-102). Singapore: Asia Research Institute, National University of Singapore.

Haas, P. M. (ed). (1992). *Knowledge, Power, and International Policy Coordination*. South Carolina: University of South California Press.

Heclo, H. (1974). Modern *Social Politics in Britain & Sweden. New Haven:* Yale University Press.

Hezri, A. A. (2004). Sustainability indicator system and policy process in Malaysia: a framework for utilization and learning. *Journal of Environmental Management*, 73, 357-371.

Horowitz, D. L. (1989). Is there a third-world policy process? *Policy Sciences,* 22, 197-212.

Jacobson, R. (2001). Aspects of Scholarly Language Use in Malaysia: Switching Codes in Formal Settings. In Ammon, U. (Ed.) (2001). *The Dominance of English as a Language of Science: Effects on Other Languages and Language Communities* (pp.177-192). Berlin: Mouton de Gruyter.

Jones, H. (August 2009). Policy-making as discourse: a review of recent knowledge-to-policy literature. *Working Paper No. 5. A Joint IKM Emergent-ODI*. http://www.ikmemergent.net/pdf/. Accessed 1 February 2010.

Kam, H.W. & Wong, R.Y.L. (Eds.) (2000). *Language Policies and Language Education*. Singapore: Times Academic Press.

Kaplan, R.B. (1993). The Hegemony of English in Science and Technology. *Journal of Multilingual and Multicultural Development*, 14(1 & 2), 151-172.

Kaplan, B.K. & Baldauf Jr, R.B. (1997). *Language Planning from Practice to Theory*. Clevedon: Multilingual Matters.

Kaplan, B.K. & Baldauf Jr, R.B. (2003). *Language and Language-in-Education Planning in the Pacific Basin.* Netherlands: Kluwer Academic.

Kaplan, B. K. (2001). English   the Accidental Language of Science? In Ammon, U. (Ed.), *The Dominance of English as a Language of Science: Effects on Other Languages and Lan- guage Communities* (pp. 3-26). Berlin: Mouton de Gruyter.

King, A. (1973). Ideas, institutions and the policies of government: a comparative analysis. *British Journal of Political science*, 291-313; 409-423.

Kingdon, J. W. (1984). Agendas, Alternatives and Public *P*olicies. Illinois: HarperCollins.

Law of Malaysia-Federal Constitution: Incorporating all amendments up to 1 January 2006. http://digitalibrary.my/.../718_Federal Constitution 2006 Eng. pdf. Accessed 9 October 2009.

Lee, M.N.N. (1999). Education in Malaysia: Toward Vision 2020. *School Effectiveness and School Improvement*, 10(1), 86-98.

Zuraidah Zaaba et al. Knowledge in the í   icops2010

22

Lemah BI, suka tukar kerja punca siswasah menggangur. 27 February (2010) Utusan Malaysia. Arkives Utusan online. http://ww.utusan.com.my. Accessed 28 February 2010.

Lester, J. P. & Stewart, J. (2000). *Public Policy: An Evolutionary Approach*. Wadsworth: Belmont.

Lin, A. M. Y. & Martin, P. (Eds.). (2005). *Decolonisation, Globalisation: Language-in-Education Policy and Practice*. Clevedon: Multilingual Matters.

Lindblom,C. E. (1990). *Inquiry and Change. The Troubled Attempt to Understand and Shape Society.* New Haven: Yale University Press.

Mcnabb, D. E. (2007). *Knowledge Management in the Public Sector*. New York: M. E. Sharpe.

Nonaka, I. & Takeuchi, H. (1995). *The Knowledge-Creating Company*. Oxford: New York.

Omar, A.H. (1979). *Language Planning for Unity and Efficiency: A Study of the Language Status and Corpus Planning of Malaysia*. Kuala Lumpur: Penerbit Universiti Malaya.

Omar, A.H. (1982a). Language Spread and Recession in Malaysia and the Malay Archipelago. In Cooper, R.L. (Ed.). *Language Spread: Studies in Diffusion and Social Change (*pp. 198-213). Bloomington: Indiana University Press.

Omar, A.H. (1982b). *Language and Society in Malaysia*. Kuala Lumpur: Dewan Bahasa dan Pustaka, Kementerian Pelajaran Malaysia.

Omar, A.H. (1985). The Language Policy of Malaysia: A Formula for Balanced Pluralism. In Bradley, D. (Ed.) Language policy, Language Planning and Sociolinguistics in South-East Asia. Pacific Linguistics. Series A; no. 67, Papers in Southeast Asian Linguistics; no. 9, (pp.39-49), Canberra: Dept. of Linguistics, Research School of Pacific Studies, Australian National University.

Omar, A.H. (Ed.) (1987). National Language and Communication in Multilingual Societies. Papers Presented at the Seventh Conference of the Asian Association on National Language (ASANAL) Kuala Lumpur: Dewan Bahasa dan Pustaka, Kementerian Pelajaran Malaysia.

Omar, A.H. (1995). Language Policy and Management in Malaysia. *Journal of Asian Pacific Communication*, 6(3), 157-165.

Omar, A.H. (1998) Language planning and image building: the case of Malay in Malaysia. *International Journal of the Sociology of Language*, 130, 49-65.

Omar, A.H. (2000). Managing languages in conflict situation: A special reference to the policy on Malay and English in Malaysia. *Journal of Asian Pacific Communication*, 10:2, 239-253.

Omar, A.H. (2007). Malaysia and Brunei. In Simpson, A. (Ed.), *Language and National Identity in Asia* (pp. 337-359). Oxford: Oxford University Press.

Zuraidah Zaaba et al. Knowledge in the í   icops2010

23

Pengajaran Inggeris pasti ditingkatkan. August 9 (2009). *Utusan Malaysia*. Arkives Utusan online. http://ww.utusan.com.my. Accessed 10 August 2009.

Pollard, A & Court, J. (July 2005). How Civil Society Organisations Use Evidence to Influence Policy Processes: A literature review. *Working Paper 249*, *Organisation Development Institute*. http://www.odi.org.uk. Accessed 19 February 2010.

Porter, W. R. and Hicks, I. (1995). Knowledge Utilization and the Process of Policy Formation. This paper was prepared by Porter/Novelli under its subcontract with the SARA Project. SARA is operated by the Academy for Educational Development as a component of the HRAA Project of the Africa Bureau, U.S. Agency for International Development (AFR/SD/HRD).http://sara.aed.org/publications/cross_cutting/knowledge utilization/html /utilization.htm. Accessed 10 April 2009.

Radaelli, C. M. (1995). The role of knowledge in the policy process. *Journal of European Public Policy,* 2(2), 159-183.

Rappa, A. L. & Wee, L. (2006). *Language Policy and Modernity in Southeast Asia*. New York: Springer.

Ricento, T. (Ed.) (2006). *An Introduction to Language Policy: Theory and Method*. Oxford: Blackwell.

Sabatier, P. A. & Jenkins-Smith, H. C. (ed). (1993). Policy Change and Learning: An Advocacy Coalition Approach. Colarado: Westview Press.

Sains, matematik dalam Bahasa Malaysia mulai 2012. July 8 (2009). *Utusan Malaysia*, Arkives Utusan online. http://ww.utusan.com.my. Accessed 8 July 2009.

Schiffman, H.F. (1996). *Linguistic Culture and Language Policy*. New York: Routledge.

Seventh Malaysian Plan: 1996-2005. http://www.epu.gov.my. Accessed 26 August 2009.

Shohamy, E. (2006). *Language Policy: Hidden agendas and new approaches*. New York: Routledge.

Takeuchi, H. & Nonaka, I. (2004). Hitotsubashi on Knowledege Management. Clementi Loop: John Wiley & sons(Asia).

Tiwana, A. (2002). Knowledge Management Toolkit : Orchestrating IT, Strategy, and Knowledge Platforms. Upper Saddle: Prentice Hall.

Tollefson, J.W. (Ed.) (2002). *Language Policies in Education: Critical Issues*. New Jersey: Lawrence Erlbaum Associates.

Tollefson, J.W. & Tsui, A.B.M. (Eds.) (2004). *Medium of Instruction Policies - Which agenda? Whose agenda?* New Jersey: Lawrence Erlbaum Associates.

Tsui, A.B. M. & Tollefson, J.W. (Eds.) (2007). *Language Policy, Culture and Identity in Asian Contexts*. New Jersey: Lawrence Erlbaum Associates.

Zuraidah Zaaba et al. Knowledge in the í   icops2010

24

Vikor, L. (1983). Language Policy and Language Planning in Indonesia and Malaysia. In Svensson, T. & Sorensen, P. (Eds), *Indonesia and Malaysia: Scandinavian Studies in Contemporary Society* (pp. 47-73). London: Curzon Press.

Wawasan 2020. http://www.wawasan2020.com/vision2.html. Accessed 16 September , 2009.

Watson, J.K.P. (1983) Cultural Pluralism, Nation-Building and Educational Policies in Peninsular Malaysia. In Kennedy, C. (Ed.), *Language Planning and Language Education* (pp. 132-150). London: George Allen & Unwin.

Wellington, J & Osborne, J. (2001). *Language and Literacy in Science Education*. Philadelphia: Open University Press.

Wong, R.Y.L & James, J.E. (2000). Malaysia. In Kam, H.W. & Wong, R.Y.L. (Eds.), *Language*

   Policies and Language Education (pp.209-240). Singapore: Times Academic Press.

Zaaba, Z. and Umemoto, K. (2009a). Teaching Science and Technology in English:

   Language-in-Education Policy in Malaysia. *International Association for Intercultural Communication Studies Conference,* IAICS 2009, September 18-20, Kumamoto, Japan.(this paper was submitted to International Association for Intercultural Communication Studies Journal, 30 November 2009).

Zaaba, Z. (2009b). Science and Technology Education in English: A Case Study of

   Language Policy in Malaysia. *The International Conference on the Social Science and Humanities,* ICOSH 2009, December 2-3, UKM, Malaysia

Zuraidah Zaaba et al. Knowledge in the í   icops2010

25