ICT POLICY IMPLEMENTATION IN THE EDUCATION SYSTEM OF RIAU PROVINCE, INDONESIA

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To my beloved mother Tarni, my father Abdullah Aziz, my uncle Pak Mus, my wife, my daughter, three sisters, brother, and all families. Finally, I dedicate this to all the people who made it.

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ABSTRACT

Implementation of ICT policy in education can bring positive change towards the improvement of education quality as it is considered a change agent for education, economic, and social culture. However, it is not easy to implement it as a national policy, since there are many obstacles encountered by education policymakers such as national financial problem, lack of facilities, and shortage of individual's skill in ICT use. This study investigated ICT policy implementation in the education system, and focused on two forms of educational changes, namely; restructuring and reculturing in three areas, namely Tanjungpinang, Batam, and Tanjung Balai in Riau Archipelago province, Indonesia. The research was a comprehensive study which investigated top-down policy implementers involving three levels; Local Education Authority (LEAs), school organization, and teachers in the Riau Archipelago province. Literature related to the policy implementation in ICT was also reviewed. Subsequently, qualitative data were collected through interviews, observation, and documents analysis. Findings were analyzed thematically. From the analysis, three main themes were discovered. Firstly, in terms of support on restructuring change of LEAs and school organization, it was found that the performance of ICT management programs, and partnership support have not achieved the local ICT policy standard and objective. Secondly, in terms of reculturing change support of policy actors' disposition on national ICT policy implementation, the findings revealed that the LEAs, school organization and teachers indicated positive attitude, although teachers' utilization skill of ICT was standard use. Thirdly, in terms of barrier, the gap between the support of local ICT policy standard and the support from education local policy actors towards the implementation of ICT in education is still wide. Based on the findings, several recommendations for further studies in the future and its implication on ICT policy strategies, ICT policy knowledge awareness, skill, and a comprehensive theoretical and framework of ICT policy implementation were suggested to support the national ICT policy implementation in the education system of schools in the Riau Archipelago province, Indonesia.

ABSTRAK

Pelaksanaan dasar Teknologi Maklumat dan Komunikasi (ICT) dalam pendidikan boleh membawa perubahan positif ke arah peningkatan kualiti pendidikan kerana dianggap sebagai agen perubahan kepada pendidikan, ekonomi, dan budaya sosial. Walau bagaimanapun, adalah tidak mudah untuk melaksanakannya sebagai dasar negara kerana terdapat banyak halangan yang dihadapi oleh pembuat dasar pendidikan seperti masalah kewangan negara, kurangnya kemudahan, dan kurangnya kemahiran individu dalam penggunaan ICT. Kajian ini mengkaji pelaksanaan dasar ICT dalam sistem pendidikan dan memberi tumpuan kepada dua bentuk perubahan pendidikan, iaitu; penyusunan semula dan pembudayaan semula di tiga daerah, iaitu Tanjungpinang, Batam, dan Tanjung Balai di wilayah Kepulauan Riau, Indonesia. Kajian ini merupakan sebuah kajian komprehensif yang mengkaji pelaksanaan dasar atas bawah yang melibatkan tiga peringkat; Pihak Berkuasa Pendidikan Tempatan (LEAs), organisasi sekolah, dan guru-guru di wilayah Kepulauan Riau. Kajian literatur yang berkaitan dengan pelaksanaan dasar ICT juga telah dibuat. Seterusnya, data kualitatif dikumpulkan melalui temu bual, pemerhatian, dan analisis dokumen. Hasil kajian tersebut telah dianalisis mengikuti tema. Tiga tema utama telah ditemukan daripada analisis tersebut. Pertama, dari segi sokongan terhadap perubahan penyusunan semula LEAs dan organisasi sekolah, didapati bahawa prestasi program pengurusan ICT dan sokongan perkongsian tidak mencapai standard dan objektif dasar ICT tempatan. Kedua, dari segi sokongan terhadap perubahan pembudayaan semula berdasarkan sikap pelaksana dasar ICT negara, dapatan kajian menunjukkan bahawa LEAs, organisasi sekolah dan guru-guru menunjukkan sikap yang positif, walaupun kemahiran para guru tentang ICT dianggap sebagai biasa sahaja. Ketiga, dari segi halangan, jurang antara sokongan terhadap standard dasar ICT tempatan dengan sokongan daripada pelaksana dasar pendidikan tempatan ke arah pelaksanaan ICT dalam pendidikan adalah masih luas. Berdasarkan dapatan kajian, beberapa cadangan untuk kajian lanjutan pada masa akan datang dan implikasinya terhadap strategi dasar ICT, kesadaran pengetahuan tentang dasar ICT, kemahiran, dan pelaksanaan teori serta rangka kerja dasar ICT yang komprehensif telah dicadangkan untuk menyokong pelaksanaan dasar ICT negara dalam sistem pendidikan sekolah di wilayah Kepulauan Riau, Indonesia.

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LIST OF OPERATIONAL DEFINITION OF TERMS

ICT policy implementation:	The process of doing, action of the ICT policy in the education field that has been formulated by policy makers that involve the aspects of ICT clear policy goal and objective, management, and partnership
ICT policy standard and objectives:	The standard goal, such vision, mission and other written strategic planning in ICT
ICT policy sources:	Several aspect of central and local support from economic, political, and social sector in regard with ICT
Top-down policy:	Policy implementation practice started from top elite bureaucrat to the bottom
Policy actors:	LEAs, school organization; school heads, administration staff, and teachers that involve in national ICT policy implementation
Policy strategy	Local ICT policy standard and objective; vision mission, and any written planning
Policy source:	Local ICT sources support on ICT policy implementation in Riau Archipelago provinces; national and local ICT budget allocation, and political will and commitment on the policy implementation.
Socio and cultural source:	Indonesia socio culture transformation context

Restructuring change:	The change and any reformation in form infrastructure and any policy structure in organizations
Organization capacity:	The capacity focuses on organizational structure, processes, resources and management issues
Society capacity	the capacity support on large scale that involves larger support from external sectors such as policy dimension, government rule, laws and norms, network, and partnership from both public and private agents
LEA	Any policy actors that has responsible and competency on ICT policy implementation (education department, education legislative, ICT department, school organization) that support in ICT policy implementation in education
Individual capacity	Teachers' knowledge, skill, and disposition toward the ICT policy implementation
Management programs:	Restructuring change activities on ICT policy such as motivation, evaluation and monitoring, human resource development, infrastructure support, and other programs in restructuring for organization development
Partnership:	The collaboration from external agents; top-down policy actors, public, private, and other institutions such as NGOs, and university
Disposition:	Personal meaning, perspective, behavior, character and perception, beliefs and attitudes, and self-reflection that more inclines toward reculturing change activity
Reculturing change:	The policy actors' disposition support on ICT policy implementation in aspect of belief, perception, mindset, and attitude

Teacher innovation:	Teacher creativity on making use of ICT media sources and the skill to support the learning process in school
ICT implementation performance:	The description of the process and the outcomes of ICT policy implementation in Indonesia, conducted by top-down policy implementers especially in case of Riau Archipelago province
Barriers in ICT implementation:	The problems encountered by policy actors in Riau Archipelago; LEAs, school organization (school heads, staff, and teachers in implementing and supporting ICT policy

LIST OF ABBREVIATIONS

ADEA	-	American Dental Education Association
APBD	-	Anggaran Pendapatan Belanja Daerah
Baltekom	-	Balai Telekomunikasi dan Komunikasi
Baltekomdik	-	Balai Teknologi Komunikasi Pendidikan
BAPEDA	-	Badan Perencanaan Daerah
BAPPENAS	-	Badan Perencanaan Pembangunan Nasional
BOS	-	Bantuan Operasional Sekolah
CBL	-	Computer Based Learning
CIDA	-	Canadian International Development Agency
DAPODIKMEN	-	Data Pokok Pendidikan Menengah
Depdiknas	-	Departemen Pendidikan Nasional
DES	-	Department of Education and Skills
DP3	-	Daftar Penilaian Pelaksanaan Pekerjaan
ECIS	-	European Conference for Information System
GB	-	Giga Bits
HRD	-	Human Research Development
ICT	-	Information Communication Technology
IHT	-	In House Training
IMTAQ	-	Iman dan Taqwa
IPTEK	-	Ilmu Pengetahuan dan Teknologi
IT	-	Information Technology
IWB	-	Interactive White Board
JICA	-	Japan International Cooperation Agency
KD	-	Kompetensi Dasar
Kemendikbud	-	Kementrian pendidkan dan kebudayaan
Kepri	-	Kepulauan Riau
KepriProv	-	Kepulauan Riau provinsi

KESBANGPOL	-	Badan Kesatuan Bangsa dan Politik
LCD Projector	-	Liquid Crystal Display
LEAs	-	Local Education Authorities
LMS	-	Learning Management System
MGMP	-	Musyawarah Guru Mata Pelajaran
NASAKOM	-	Nasional Agama dan Komunis
NGfL	-	National Grid for Learning
NGO	-	Non Government Organization
NOF	-	National Opportunity Fund
OECD	-	Organization Economic Cooperation and Development
Ofsted	-	Office for Standard in education
OHP	-	Overhead projector
PAS	-	Paket Aplikasi Sekolah
PEMKO	-	Pemerintah Kota
PP	-	Peraturan Pemerintah
PPRI	-	Peraturan Pemerintah Republik Indonesia
R & D	-	Research and Development
RKJMD	-	Rencana kerja jangka menengah daerah
RKJPD	-	Rencana kerja jangka panjang daerah
RENSTRA	-	Rencana Strategis
SEAMEO	-	Southeast Asian Ministers of Education Organization
SEG	-	Serious Games
SKPD	-	Satuan Kerja Perangkat Daerah
SMP N	-	Sekolah Menengah Pertama Negri
SMU N	-	Sekolah Menengah Umum Negri

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This study analyses and explicates the aspects involved in the implementation of ICT policy in the education system of Riau Archipelago province, Indonesia, in supporting the Indonesian national program of technology and digital literate society. This study also highlights the barriers faced by Riau Archipelago provincial government in implementing the national ICT implementation policies in education.

The successful use of ICT tools of instructional technology in teaching and learning in school must not depend on one aspect of capacity only but should be supported by other elements. For that reason, in order to have full understanding of ICT policy implementation, the researcher feels there is a need to conduct the study holistically. Therefore, two theories; Van meter and Horn's policy implementation process theory, and disposition theory towards ICT innovation use are applied to support this study.

Through the theoretical framework of ICT policy implementation, the researcher offers a comprehensive way for the accomplishment of ICT policy implementation in education system to all Indonesian LEAs and all education stake holders, based on case study in Riau Archipelago province, Indonesia.

1.2 Background of the Study

Many educational experts believe that ICT in education can bring positive changes towards the improvement of education quality (SEAMEO, 2010; Eurodice, 2011). In addition, ICT is also considered as a change agent whether in education (Fullan, 2001), or in the economic business sector that changes social living towards better prosperity in developing countries (Kozma, 2003; Terziovski, 2007; Reinert, 2008, 2010). Based on the facts above, many developed and developing countries implemented and adopted this ICT policy as the media of learning in school, including Indonesia (Tearle, 2004; Ofsted, 20012011; UNESCO, 2014).

However, it is not easy to implement a national policy. For instance, experts assume that the education policy has strong relationship with political mobilisation and development, religious institution, local community groups, and family (Ripley and Franklin, 1982; Fagerlind and Saha, 1989). Policy implementation at any level, unexception in education asks many discussion and consensus from many stake holders; ruling political party, government bureaucrat and administration, teachers, researchers and many other external societies (Fiske, 1996). The policy implementation also needs the consensus of the policy actors from top to down (Hill and Hupe, 2002).

This indicates that the absence of these elements explained above made the policy of ICT implementation in UK (Ofsted, 2010), Asia for most of the countries (UNESCO, 2007, 2014), Africa, in case of South Africa, (Assan and Thomas, 2012) encountered several complex barriers that perpetually having disappointed results (Makinde, T, 2005), ranging from infrastructure, individual capacity of illiterate matter to the economic reason of poverty (Olivia, A.T.F.K, 2007).

Indonesia as one of developing countries has also formulated their ICT policy to be implemented. In preparing the Indonesian citizens towards knowledge workers for the Information Society Age, the ICT implementation was set up through the policy under Five Year Action Plan as a strategic planning (TKTI, 2001). The Five

Year Action Plan under the regulation of Presidential Instruction No.6/2001 clearly explains about how the Indonesian government sets their strategic planning and goal towards the ICT implementation.

There are three main points to be emphasised in the regulation of Five Year Action Plan; ICT policy, human capacity building for ICT, and ICT infrastructure (TKTI, 2001). In terms of ICT policy, several points are being emphasized, among them are building partnerships and alliances among private sectors, strengthening the frequency spectrum management system in Indonesia including effective management for new multimedia wireless, broadcasting, broadband service and system, and developing an independent regulatory body (TKTI, 2001).

In terms of human capacity building, several points have been highlighted as the target to be achieved by this regulation of TKTI (2001) as well such as to establish the policy to stimulate R & D (research and development) in ICT in the private sectors and partnership with universities and public institutions. The initiative includes developing collaboration between the ICT industry and ICT educational institutions through training and R & D and forming a network for skill and capacity development, developing ICT curricula, using ICT as an essential part of the curricula and learning tools in schools/universities and training centers, conducting ICT skill training for government employees, facilitating the use of internet for more efficient teaching and learning in schools, and establishing an efficient support and facilitation scheme for the financing for ICT.

Whilst in terms of infrastructure, several aspects are also mentioned to be the target of TKTI (2001) such as restructuring the government interaction system to achieve good governance, revitalising government portals, fast download, and having rapidly access to information, procedure, and specific contacts. In addition, it is stated that the government could build an online action plan for each government agency, promote easy access to essential public data, promote electronic access to provide basic information, interaction, and services for citizens, develop online submission of financial report by public agencies, and develop public service online.

To strengthen its national development readiness on e-government, the Indonesian government realised the central role of education as formal institution of human capital and media in building individual capacity. Therefore, another ICT policy is established into the education field to strengthen the ICT policy implementation, as stated in Regulation no. 74 Segment 2. 4 – 7, 2008 is teacher competency (PPRI, 2008). At least one competency should be possessed by teachers in this regulation, which is teacher competence on the use of ICT.

In Clause 2.1.4, one of the statements stated is to make use of media learning of technology, while in Clause 2.6 teachers are advised to use ICT functionally. Clause 2.7.b re-enforces on teachers' competence towards the use of ICT media, where it is noted that technology media use is considered as one of the competencies that should be possessed by teachers (PPRI, 2008).

In the school for the year curriculum (2013), two regulations of Permendikbud were established. In Permendikbud No. 59. Appendix 1, it is stated that in all subjects that "technology is one of the core competencies that should be understood, applied, and analysed in knowledge factually, conceptually, procedural and metacognition, based on their inquiry and integrated by all students for all classes and subject teaching" (Permendikbud, 2014), whilst in Permendikbud No. 81A for item G of lesson plan procedure in terms of learning source, it is described that teacher as facilitator is demanded to make use of abundance of outside sources such as electronic and media besides textbooks (Permendikbud, 2013).

Some main points can be explored in this study based on the facts mentioned above. These points cover how the local ICT resources (financial budgeting, social culture, and political condition), ICT strategy, and local ICT policy actors support the policy outcomes and its impact towards their restructuring and reculturing change of ICT policy implementation in the education system of Riau Archipelago.

1.3 Theoretical and Practical Problem

The condition of ICT policy implementation in the field of education is still far from the expected standard. This is because the process of innovation adoption of technology use is not a simple thing (Mathur, 1991). For instance, teachers only use ICT for e-mailing purposes and instructions in class when preparing for teaching. This is because teachers possess low ICT skills. ICT has been used only 22% in math and science, while 5% in literature and language. For instance, teachers also have a lack of appreciation and only few teachers integrate ICT into their subjects (Russel, 2003; Tearle, 2003; Punie et al., 2006; Balanskat, 2006, 2007; Toure et al., 2008). Consequently, teachers are required to learn digital technology to support the national ICT policy implementation.

In the case of Indonesia, teachers who play the crucial role in the ICT implementation have yet to acquire enough skills and knowledge, lack of experience, and have low master of English and resistance to change or resistance to innovation (Marwan &Sweeney, 2010; Yuhetty, 2003). Meanwhile, in the case of Tanjungpinang-Kepri, some teachers still have insufficient skills to use ICT and majority of them have no knowledge on how to install software, thus there is lack of ICT integration in subject teaching (Adyputera, 2010; Haluan Kepri, Baltekkom Kepri, 2013).

Other than that, there is lack of full support to the implementation of ICT from the schools. This can be seen in some places in Indonesia such as in Bali, South Sulawesi, and other areas which have insufficient support of facility ranging from lack of LCD projector, inappropriate or non-contextual of animation of courseware and the shortage of time of preparation, as well as lack of technical support to sudden blackout of electrical supply (Yuhetty, 2003; Hartati, 2003; Marwan and Sweeney, 2010).

In view of ICT infrastructure and resources in school, the implementation of ICT policy in Indonesia does not have much of a difference with other ASEAN countries such Myanmar, Philippines, and Cambodia. The same scenario happening in terms of ICT professional development, community/partnership, national curriculum, teaching and learning, evaluation and research is still in the applying level (SEAMEO,

2010). In the case of Riau Archipelago, the implementation of ICT policy also lacks of facility support of infrastructure, electrical, and communication problems (Baltekkom Kepri, 2013).

In addition, the support from the local government of education authorities (LEAs) and private sectors is still insufficient, where the participation and involvement from them is often too low and there is also lack of support of funding (Yuhetty, 2003; UNESCO, 2003). In addition, the plan and policies of implementing the Indonesian national ICT policy in terms of education is still in the infusing level, whilst Singapore and Malaysia are already in the stage of transforming (SEAMEO, 2010).

Based on the evidence, this study has explored the ICT policy implementation from three vantage points. The first point is looking at the support from the policy actors of LEAs as society capacity, school organisation, and teacher individual capacity towards the restructuring change of their ICT policy standard and objective, ICT management programs, and partnership in the Riau Archipelago province. Second point highlights the impact of this national ICT policy implementation on the reculturing change of top-down policy actors' disposition of LEAs, school organisation, and teachers in the Riau province. Lastly, this study aims to find out the barriers that are confronted by LEAs, school organisation, and teachers in the Riau Archipelago province, Indonesia in implementing the national ICT policy in the education system which will be elaborated into several sub points in detail as below.

1.4 Research Objectives

The research objectives are:

i. To investigate the impact of implementing the national ICT policy towards the restructuring change support on LEAs and schools' ICT policy standard and objective, ICT management programs, and ICT partnership in the Riau Archipelago province.

ii. To investigate the reculturing change support of the top-down policy actors' disposition in LEAs and school organisation, in supporting the national ICT policy implementation in the Riau Archipelago province.

iii. To investigate teachers' innovation and creativity on making use of ICT media in the learning process.

iv. To investigate the barriers encountered by the policy actors in LEAs and school organisation in adopting the national ICT policy implementation in the Riau Archipelago province.

v. To develop a suitable theoretical framework of implementing ICT for the education system in Riau Archipelago, which can be applied as a strategic plan in the future to support the national education policy of ICT implementation in the province.

1.5 Research Questions

i. How does the national ICT policy implementation affect the restructuring change support on LEAs and schools' ICT policy strategy of standard and objective, ICT management programs, and ICT partnership?

ii. How does the national ICT policy affect the reculturing change support of the top down policy actors' disposition in LEAs and school organisation in supporting the ICT implementation in Riau Archipelago province?

iii. What are teachers' innovation and creativity in making use of ICT media in the learning process?

iv. What barriers confront the Riau Archipelago LEAs, schools, and non-ICT teacher encounter in implementing the national ICT policy?

v. What is the theoretical framework that can be applied as a strategic plan in the future to support the implementation of national policy of ICT in the education system of Riau Archipelago province?

1.6 Theoretical Framework

In support of looking into the ICT policy implementation in education in Riau Archipelago, Indonesia in this study, the researcher uses two theories in his research theoretical framework. These two theories used by the researcher are Van Meter and Horn's policy implementation process theory and disposition theory that has been written by several education and sociology experts like John Dewey, Vygotsky, and Piaget. These two theories are explained as follows:

1.6.1 Policy Implementation Process Theory

According to Van Meter and Van Horn (1975), policy implementation is about the partnership and participation from many parties, internal - external, public – private work together, and hand-in-hand support of the goal through the consensus from all policy actors. In other words, policy implementation is about the comprehensive capacity building that involves multiple actors; individual capacity, organisation, and society (Eade, 1997) in driving the organisational change in the comprehensive concept of framework (Sabatier and Mazmanian, 1980) both by reculturing and restructuring (Fullan, 2001).

For instance, Van Meter and Van Horn's treatise describes the policy implementation as the consequence of a policy decision that is made followed by commitment on financial support as the part of policy source. However, the most important thing is that the policy implementation will be going nowhere if the goals and objectives of the strategic planning are not clearly stated (Pressman and Wildavsky, 1973). Besides,

Van Meter and Van Horn's conceptual framework of the policy implementation process also describes that, policy analysis in a comprehensive way on the implementation program takes a long period of time and multiple actions and resources.

This conceptual framework built by Van Meter and Van Horn is the portrait of how the policy actors organise the change or innovation that is supported with control (monitoring and evaluation) on it. In addition, Van Meter and Van Horn's conceptual framework is about the impact of public policy, and how the people involved with the policy implementation build their capacity on the aspect of relationship or partnership with external agents or actors, which is what Van Horn and Van Meter call as "intergovernmental relationship". In this conceptual framework, the primary attention highlights on the organisational change and its control as they believe these two aspects as the greatest contribution on theory.

1.6.1.1 Van Meter and Van Horn's model of the policy implementation process

Van Meter and Van Horn present six variables to link policy and performance. However, these variables are fundamentally developed by two main variables; first, policy standard and objective, and second, policy resources which then are supported by other four variables. In addition, the policy standard and objective are supported or linked to the inter-organisational communication and enforcement activities then connected to the disposition of implementers, and are also connected to the characteristics of the implementing agencies. Meanwhile, the policy resource is then linked to the support of the economic, social, and political condition. This economic, social, and political condition is next connected to the same variable of the disposition of implementers. But the fact is that this theory is basically inter-related to each other.

1.6.1.2 Policy Standard and Objectives

In terms of the function of the standard and objective, Van Meter and Van Horn delineate this as a framework, and the concept is to be carried out by all policy implementers. For instance, the aim of this function can be used as an instrument to measure the performance of the policy implementation. So it is suggested that the policy standards and objective should be clearly and accurately stated, otherwise is impossible be carried out. In addition, the awareness of implementers towards the clarity and the accuracy of the standards and objectives of the policy is considered very important (Van Meter and Van Horn, 1975).

Other than that, Pressman and Wildavsky (1973) argue that goals and objectives are the two things that determine the success or the failure of the implementation process. To determine the standards and objectives of a policy decision, several points can be used to evaluate the performance of the policy such as using the policy maker's statement as reflected in government documents; program regulations and guidelines that state about how the programs are being implemented.

1.6.1.3 Policy Resources

The resources in the policy may include funds and incentives in the program. Van Meter and Van Horn also note that federal incentive is considered as the major contributor to the failure or success of the policy implementation (Derthick, 1972).

1.6.1.4 Inter-organisational enforcement activities

According to Van Meter and Van Horn (1975), communication among organisations is a complex process. If the source of communication gives a different, conflicting and inconsistent interpretation of the standard and objectives, the policy implementers will have a difficulty to carry out the policy. In this inter-organisational

or intergovernmental context, two types of enforcement - first, technical advice and assistance, second, central and local authorities influence - used as follow-up activities are important. Some of the central or local authority influences are socialisation, persuasion, and co-optation of state and local actors, achieving the influence of participation, requiring state or localities to draw up, and elaborating the plan for administration of a local or central program. Finally, the controlling aspect such as doing evaluation, monitoring, administrative and management reviews, audits, and other feedback mechanisms such as reports by non-governmental advisory committee or NGOs should be carried out (Van Meter and Van Horn, 1975).

1.6.1.5 The characteristics of the implementing agencies (Organization)

Looking at the characteristics of the organisational implementation, at least two factors are suggested by Van Meter and Van Horn (1975) that can be observed by organisations in implementing one public policy. These are the support among legislators and executives and the linkages from both formal and informal agencies. In other words, the development of the organisational program will not succeed if there is no collaboration or partnership support from other capacities; society, organisation, and individual (Eade, 1997), and development is a holistic action that needs support from many sectors; political, social, culture, economic, language, education, law, and management (Hussin, et al., 2005).

1.6.1.6 Economic, social and politic condition

According to Van Meter and Van Horn, the implementation of public policy must not be segregated from the national economic, social and political context. Moreover, Van Meter and Van Horn noted that before the stakeholders establish the policy, they should consider the aspect of economic resource, national socio condition, public opinion and perception on the related policy issues on the field, elite politics' attitude and concern on the policy being implemented, and the most of all, the support

and participation from external sectors; private and public (Van Meter and Horn, 1975).

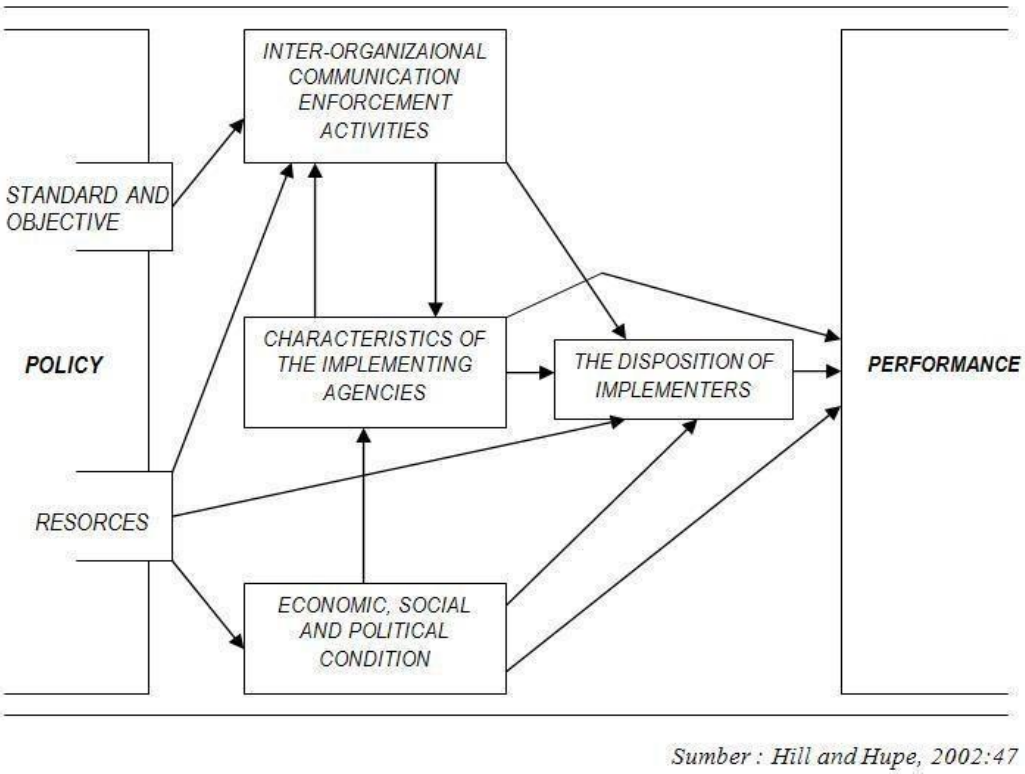

Figure 1.1 : Van Meter and Van Horn's Theory of Policy Implementation Process

1.6.2 Disposition of Implementers' Theory

The disposition of the implementers' theory enlightens the policy actors' perceptions and responses towards the policy implementation. This aspect involves policy actors' or practitioners' mind set, attitude, belief, behaviour, and perspective of the policy being implemented. Furthermore, this is also about awareness and how far the policy actors are concerned about it. Van Meter and Van Horn categorise this disposition into three parts; first, cognition (understanding on policy), second, direction of the response which consist of acceptance, neutral, and rejection, and third, intensity or the quality of the response that is much involved with aspect of concern of the implementers on the policy. Van Meter and Van Horn (1975) further explain that the more implementers accept the policy, the more positive or successful the adoption of

the policy will be. Thus, this aspect of intensity of implementers' responses and perspectives is quite urgent in supporting the policy implementation process according to Van Meter and Van Horn (1975).

The foundation of disposition theory is derived from several old and popular psychological and social education thinkers such as John Dewey, Combs, Vygotsky, and Piaget (Dewey, 1922; Combs et al, 1969; Vygotsky, 1962; Piaget, 1958). Dewey notes disposition as something related to human habit connecting with personal meaning, perspective, and perceptual of life that is not something readymade, but is a continuity action through a long activity called process (Dewey, 1893).

Grounded by the fundamental concepts above, other new thinkers and experts further add that disposition is something in regards with personal behaviour, character, and perception (Wasicsko, Callahan, and Wirtz, 2004). More experts further describe that disposition involves three aspects; beliefs and attitudes, characters, and the reflection through personal "observable behaviours" (Burant et al., 2007). Meanwhile, Fullan (2001) regards personal disposition as the root and the radical thing for driving the real change in an organisation, also called as "reculture". Clearly, disposition is a very close link with personal values, commitment, and personal ethics that impact on someone's behaviours characterized by mental, emotional, spiritual aspects that also influence an individual's way of thinking (National Symposium, 2003).

Other than that, disposition also cannot be separated from knowledge and skill to measure teachers' performance in education (Bone and Griffin, 2009). Disposition or what O'Day et al., (1995) noted it as attitude, also becomes part of individual capacity building (Lusthaus, et al., 1995; Eade, 1997; Morgan, 1998; UNDP, 2002; JICA, 2004; EuropAid, 2005; UNESCO, 2006).

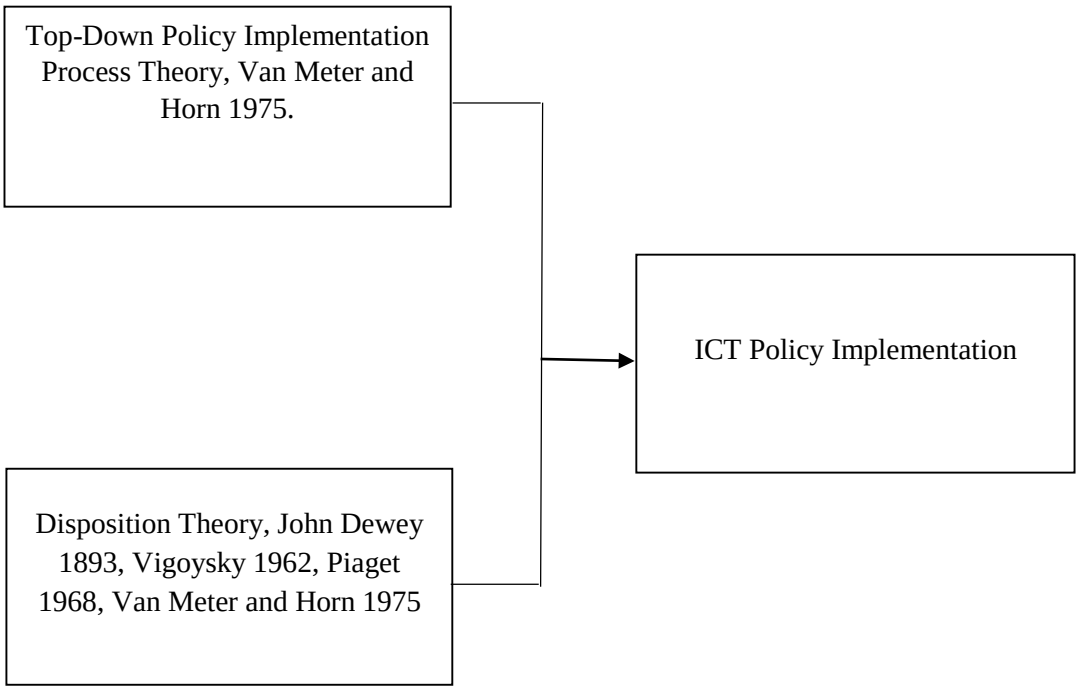

Figure 1.2 : Theoretical framework

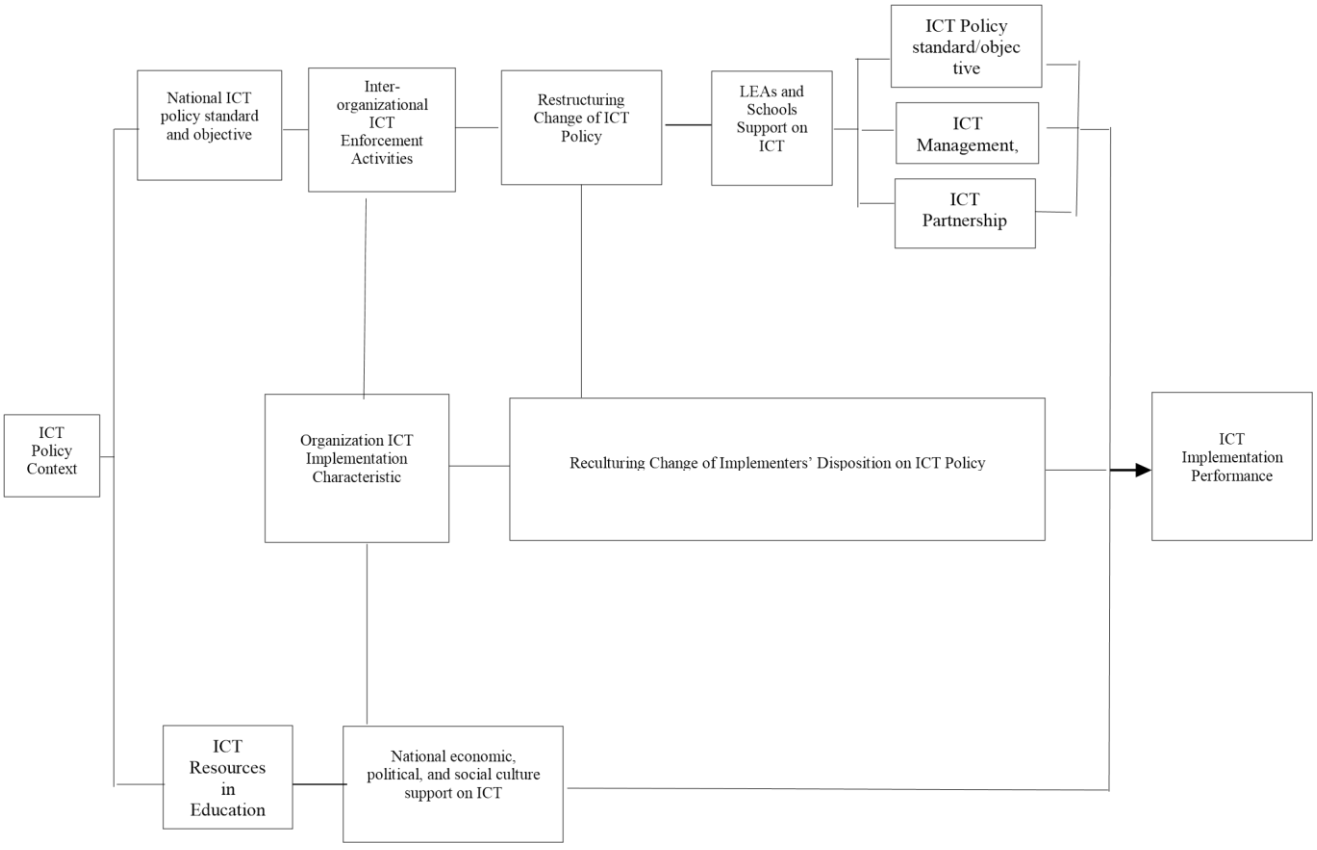

Figure 1.3 : Conceptual framework

1.7 Importance of Research

Through the comprehensive theoretical and framework policy of ICT implementation, this study is considered very important. This comprehensive theoretical framework of ICT policy is designed based on the answer of the five research questions. Those are clear ICT policy standard and objective in supporting organisational restructuring and teachers' disposition of reculturing change in education and teachers' qualified skills in making use of ICT media in learning.

In addition, this theoretical and instrumental concept is also designed based on the support and commitment from central and LEAs of Riau Archipelago province in encountering the barriers confronted by schools and teachers, as implementers of the ICT policy in ICT in the field such as local ICT policy support of clear vision and mission, strategic planning of ICT, ICT management programs support; ICT infrastructure, human capacity development, evaluation and monitoring, curriculum and ICT team, financial, and motivation support, and partnership support from external agents, both from government organization and any private sectors in giving the support of Indonesia national ICT policy implementation in Riau has been proclaimed in the three national ICT regulations; Five Year Action Plan, p.3-4, 2001, teacher competency no 74 section 2 year 2008, segment 2. 4-7, and curriculum 13 of Permendikbud No. 81A, p.42, 2013 and No.
59, appendix 1, 2014.

1.8 Scope and Limitations

Due to the limitation of time of the study and the fund of sponsor from the government of Riau Archipelago province, Indonesia, the researcher will limit the study of ICT policy implementation in the education system of Riau Archipelago province on several limitations.

Firstly, in terms of location, the researcher will limit his scope of his study of ICT policy implementation in Riau Archipelago province at three areas; Tanjungpinang, Batam, and Tanjung Balai Karimun. Secondly, in terms of restructuring change of ICT policy implementation, the researcher will limit the study on policy standard and objective, management program, and partnership. In terms of policy standard and objective, this will be limited on organisation vision, mission, and strategic planning on ICT. In terms of management program, this will be limited on ICT facility support, monitoring and evaluation, training, and motivation. Whilst in terms of partnership, this study will be limited on public and private participation in supporting ICT policy implementation in Riau Archipelago province, Indonesia.

Thirdly, in terms of reculturing change, the researcher will limit the study on policy implementers' disposition on ICT policy implementation which involves several top-down policy actors; LEAs (education legislative, education departments, ICT department, and local planning agency), and school organisation (principal, vice principal, and non ICT teachers). The policy actors' disposition will describe about their attitude, perception, belief, and the barriers they encounter towards the implementation of the nation ICT policy. Finally, in terms of teachers' innovation creativity, the researcher will limit the study on non-ICT teachers' creativity and skill in using any ICT media source to support their teaching and learning process in class the class both offline or online.

1.9 Summary

This study argues for the need of the Riau Archipelago province government to reinnovate and analyse Indonesia's national top-down policy practice of ICT policy implementation and its impact towards their education system. Therefore, the policy context regarding the ICT policy implementation, vision, mission, goal standard, policy sources and objective, benefits, barriers, and other factors related to this matter such as inter-organisation restructure change support, and implementers' disposition reculturing change support on Indonesia national ICT policies are discussed.

In this study, five research objectives and five research questions are stated by researcher. Therefore, in order to support those five research objectives and questions above, two theories; Van Meter and Horn's ICT policy implementation process and disposition theory, are applied. The major work of this study is also framed as researcher's research framework. Lastly, the interests of this study are limited to the on-site location at three areas of Riau Archipelago, namely Tanjungpinang, Batam, and Tanjung Balai Karimun.

In terms of restructuring change of ICT policy implementation, the researcher limits the study on policy standard and objective, management program, and partnership. in terms of reculturing change, the researcher will limit the study on policy implementers' disposition on ICT policy implementation which involves several top-down policy actors; LEAs (education legislative, education departments, ICT department, and local planning agency), and school organisation (principal, vice principal, and non ICT teachers). Last but not least, in the context of teacher innovation and creativity of ICT use, the study is limited on teachers' skill in making use of any ICT media source in supporting their learning process in class both online and offline.

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