THF Literature Review

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TOWARDS A FRAMEWORK OF EDUCATION POLICY ANALYSIS

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Overview

What are some factors that assist or impede reform implementation? Why do some education policies fail, and whom do they fail? What are the considerations that go behind formulating an education policy? What might be some policy effects that result from certain global developments? Most importantly, is there a systematic and structured heuristic for scholars and policymakers to answer these questions?

Indeed, while education research might encompass broad themes in areas such as leadership and school improvement, teacher development and teacher quality, skills and employability, equity in education, governance and quality assurance, and citizenship education, it is ultimately policy-making that translates these domains into practice.

Yet while much has been written on policy analysis—a catch-all term that comprises a number of forms, such as the development of broad analytical models through which the policy process can be understood and interpreted, analyses of a range of policy issues or critiques of specific policies—existing analytical frameworks do not sufficiently illuminate the complexity of policy development processes. Policy analysis within education must be capable of recognizing the various levels at which policy development takes place, the myriad range of educational institutions involved and the importance of specific cultural contexts.

This paper reviews the current literature on policy analysis—specifically, on education policy formulation and implementation in Asia, develops a policy framework for analysis, and applies this to the formulation and implementation of education policy in Southeast Asia. It also considers the policy effects of international and national assessments, and provides a case study of the education policy landscape in Singapore.

Literature Review

While many definitions of policy analysis can be found in the literature, this paper takes Taylor et al. (1997)'s position that policy analysis is the study of what governments do, why and with what effects, recognizing that institutions at all levels of the education system are effectively part of a public system, even if they are not formally in the public sector. In particular, Quah (2015) argues that policy formulation is always relatively easy; it is the implementation that is complex and the Achilles' heel of any administrative reform (Caiden, 1976).

Decades of policy implementation studies have put to lie the notion that there can be a generalized theory of policy implementation (deLeon & deLeon, 2002). Collectively, these studies illustrate that one size never fits all; context matters; and that when policymakers and analysts face an extremely complex condition, they are better off if they try to understand the particular issues, rather than proposing a generic metatheory of why some policies fail or why some succeed. Indeed, policy analysis studies today focus on the unique social, cultural, economic, and political contexts that bedevil specific policy or reform implementation. It is in this research paradigm that at least two gaps exist in the policy implementation literature.

First, research on policy implementation in Asian countries has thus far *mostly* focused on case or country studies, rather than comparative cross-national studies. Significant research on policy implementation has been conducted on China and the

Philippines: For China, some of these studies include those by Zheng, Lu and White (2009); Burns and Zhou (2010); Gobel (2011); and Ahlers (2014). In the case of the Philippines, some of the research on policy implementation has been conducted by Riedinger (1995); Reyes (2007; 2009a; 2009b); and Brillantes and Flores (2011). Reyes (2009a), in particular, has studied the implementation of the Textbook Delivery Program (TDP)—a civil society-led initiative supported by state institutions that has focused on improving transparency in the delivery and distribution of textbooks—in the Philippines. His analysis revealed that carrying out policy—like the TDP—in contexts of scarcity creates a nexus where the constructs of factors of implementation and causes of corruption constantly converge.

However, exceptions exist: Cloete (2000) has compared the effectiveness of the public bureaucracies in delivering public services in Indonesia, Malaysia, the Philippines, Singapore and Thailand. Kozma (2008) has presented a framework for researchers and policymakers to analyse, formulate, revise, and compare national ICT efforts across several countries, and examined strategic and operational policies of various countries including Jordan and Singapore. Acuña-Alfaro and Do (2010) have discussed public administration reform in Vietnam since the beginning of the 21st century, and suggested ways forward for speeding up the reform process. Leoseng and Zimmermann (2005) have explored the implementation of user charges for waste water treatment in three Thai cities, concluding that this particular policy initiative has been stymied, because of central government actors and agencies' lack of missing skills, knowledge and expertise, the 'unpreparedness' of the 'local actors', and the prevalence of tradition. Finally, Quah has studied the implementation of anti-corruption measures in Indonesia, Malaysia, the Philippines, Singapore and Thailand (1982); shone a spotlight on the implementation of anti-corruption measures in ten Asian countries: Hong Kong SAR, India, Indonesia, Japan, Mongolia, the Philippines, Singapore, South Korea, Taiwan and Thailand (2011); and compared public bureaucracies in Indonesia, Vietnam, the Philippines, Singapore and Malaysia (2016), demonstrating that the latter two public bureaucracies are more effective in policy implementation than their regional counterparts because of their favourable policy contexts and higher level of organizational effectiveness.

Second, and more pressingly, there is a significant research gap on *education* policy implementation in Asian/Southeast Asian countries. While whole works have examined the role of the public bureaucracy in policy implementation across Asia (Scott 1987; Warwick 1987; Richter 1987), these studies do not deal with policy implementation in the education sector, and at a wider systems level that go beyond the bureaucracy. While a generalized *theory* of education policy implementation might not be possible, this paper attempts to establish a policy framework as a heuristic tool to analyse policies, especially as they relate to the formulation and implementation of education policy in Southeast Asia.
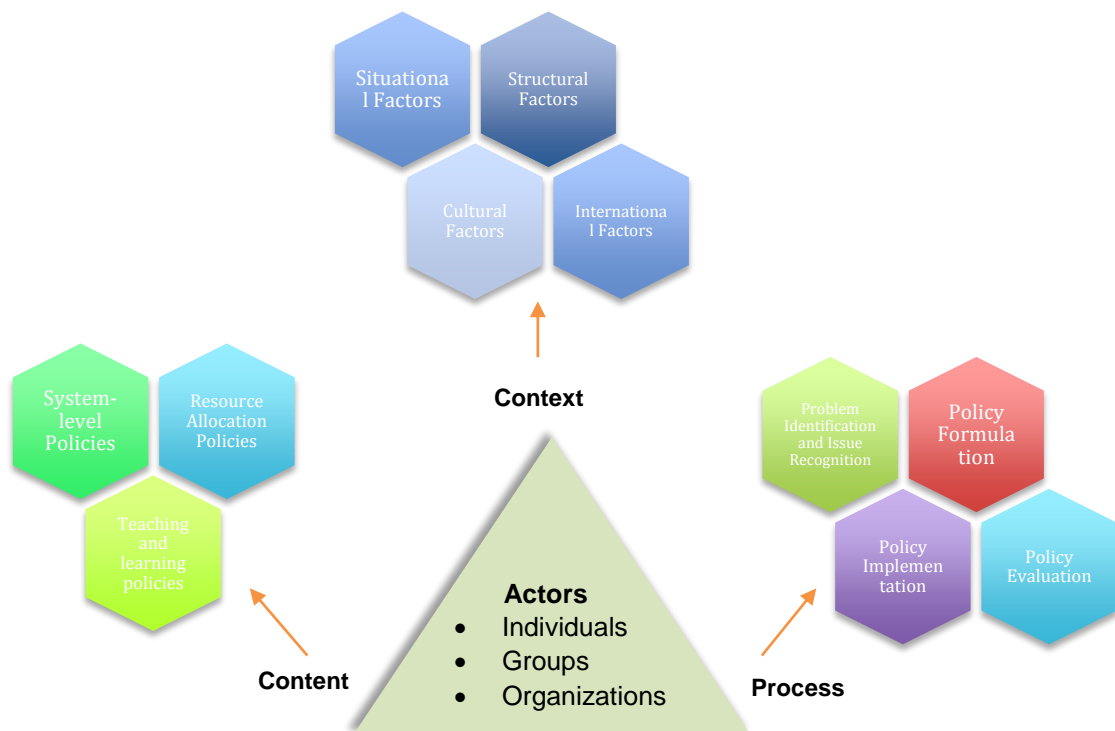
The Education Policy Framework

Conceptually, the education policy framework proposed in this paper owes an intellectual debt to existing policy analysis discussions by Walt and Gilson (1994), Taylor et al. (1997), deLeon and deLeon (2002), Buse, Mays, and Walt (2005), Bell and Stevenson (2006), and Rizvi and Lingard (2010).

By synthesizing their various contributions to the policy analysis literature, this proposed framework acknowledges the importance of looking at the content of policy, the processes of policy making, how power is used in education policy, and the wider social context.

Therefore, this heuristic emphasizes the role of the *state*, nationally and internationally, the groups making up national and global *civil society*, and the role of the *private sector*, in understanding how these disparate groups interact and influence education policy. It also involves understanding the *processes* through which such influence is played out (e.g. in formulating policy) and the *context* in which these different actors and processes interact. The framework (Figure 1) focuses on content, context, process and actors, and is can be applied to high, middle and low income countries.

Figure 1: The Education Policy Framework

The education policy framework is a highly simplified approach to a complex set of inter-relationships, and may give the impression that the four factors—content, context, actors, and process—can be considered separately. This is not the case. In reality, actors are influenced (as individuals or members of groups or organizations) by the context within which they live and work; context is affected by many factors such as instability or ideology, by history and culture; and the process of policy making—how issues get on to policy agendas, and how they fare once there—is affected by actors, their position in power structures, their own values and expectations. Likewise, the content of policy reflects some or all of these dimensions. Therefore, while the education policy framework is useful for helping an observer to think systematically about all the different factors that might affect policy, it is more

akin to a map that shows the main roads but that has yet to have the other cartographic features added to it.

Actors

As Figure 1 illustrates, actors are at the centre of the education policy framework. Actors may be used to denote individuals (a particular statesman—Lee Kuan Yew, the former Prime Minister of Singapore, for example), organizations such as the World Bank or multinational companies such as Pearson Education, or even the state/government. However, this is a simplification, since individuals cannot be separated from the organizations within which they work and any organization or group is made up of many different people, not all of whom speak with one voice and whose values and beliefs may differ.

Content of the Policy

In considering the content of the policy, several important questions arise: How is the policy articulated and framed? What does the policy aim to do? What are the values contained within the policy? Are these explicit, or implicit? Does the policy require action, if so what and by whom? Analysis of the policy text is not a simple and straightforward activity. There is considerable scope for interpretation, even in the most explicit of policies, and it is as important to identify the 'silences' (what is not stated) as well as what is clearly and openly articulated.

At the same time, it is possible to distinguish education policies according to a framework that broadly groups specific policies as system-level policies, resource allocation policies, or teaching and learning policies (Tobin, Lietz, Nugroho, Vivekanandan, & Nyamkhuu, 2015).

**Figure 2:** Content of Education Policies
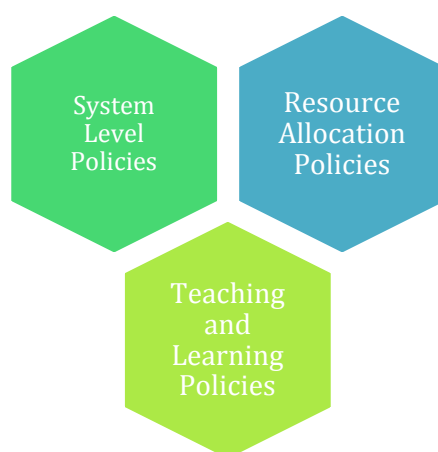
System-level policies point to a policies regarding evaluation systems and operations. These include assessment policies and policies regulating curricular and performance standards.

Resource allocation policies refer to the ways in which resources are determined and allocated within an education system. This would include policies on in-service professional development programs to stakeholders such as school leaders and teachers, pedagogical or instructional materials such as textbooks or other teaching resources, and streaming mechanisms that dispatch students to schools according to certain metrics.

Teaching and learning policies relate to specific school- and classroom-level practices, and relate to factors such as: classroom management, differentiated teaching and support for students, professional collaboration and learning, teacher-student relationships, job satisfaction and efficacy, enhanced learning activities, collaborative or competitive learning, and programs to support students' interest and motivation in school.

Contextual Factors that Affect Policy

Figure 3: Contextual Factors Affecting Education Policies
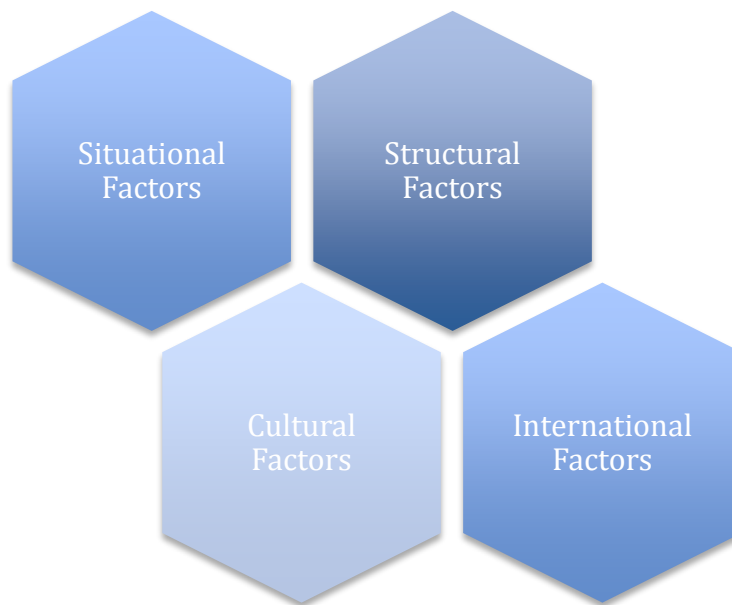
Context refers to systemic factors – political, economic and social, both national and international – which may have an effect on education policy. There are many ways of categorizing such factors, but Leichter (1979) provides one useful way:

Situational factors are more or less transient, impermanent, or idiosyncratic conditions which can have an impact on policy (e.g. wars, droughts). These are also known as 'focusing events,' which are fundamental events that cause members of the public as well as key decision makers to become aware of a potential policy failure (Stone, 1989). For example, McNeal, Kunkle, and Bryan (2016) find anecdotal evidence that high-profile cyberbullying cases in American schools have led to states updating existing bullying laws to include cyber harassment as well.

Structural factors are the relatively unchanging elements of the society. They may include the political system and the nature of the bureaucracy, and extent to which it is open or closed and the opportunities for civil society to participate in policy discussions and decisions; structural factors may also include the type of economy and the employment base. For example, where wages for teachers are low, or there are too few jobs for those who have trained, countries may suffer migration of these professionals to other societies where there is a shortage. Other structural factors that will affect a society's education policy include demographic features or technological developments. As a case in point, technological change in everyday life has necessitated policy efforts to integrate ICT (information communications technology) into schools. Across Southeast Asia, all countries have either begun establishing, or already have, a national ICT in education vision (SEAMEO, 2010). Such a vision provides policy makers, education leaders and educators with a vehicle for coherent communication about how ICT may be effectively used for teaching, learning and administration. More importantly, it provides other ICT-in-education policies with coherence, direction and meaning, and help drive changes in culture, policies and practices mediated by ICT (Hew & Brush, 2007).

Cultural factors may also affect education policy. In societies where formal hierarchies are important, it may be difficult to question or challenge high officials or elder statesmen. The position of ethnic minorities or linguistic differences may lead to certain groups being unreached or underserved. In the Mekong sub-region, children from remote communities and poor ethnic minority families often lack access to schools or to complete schooling. Given the small size of most hill tribe villages, village high schools are impractical. As a result, most high school students are required to move to larger urban centers to attend secondary schools (Bechtel, 2010, p. 18). Religious factors can also strongly affect policy, as evidenced by the acrimonious debate surrounding the teaching of evolution in American schools since the 1920s. In the last decade, several American states have adopted anti-evolution education bills that allow children to be taught by educators who are able to promote creationist alternatives to evolution (Jaffe, 2015).

International or exogenous factors which are leading to greater inter-dependence between states, and influencing sovereignty and international cooperation in education. Although many educational issues are dealt with by national governments, some encompass cooperation between national, regional or multilateral organizations. For instance, ASEAN Member States signed a charter in 2007, expressing an aspiration to become a single entity called the ASEAN Economic Community. To this end, there has been a push towards a regional common reference framework—the ASEAN Qualifications Reference Framework (AQRF)—for the recognition of professional qualifications across ASEAN member states. With harmonisation and standardisation of qualifications frameworks, ASEAN officials hope that this would facilitate free flow of skilled labour within the region.

All these factors are complex, and unique in both time and setting. For example, Thailand has embarked on major educational reforms since the 1990s, in line with its adoption of the 1990 Education for All (EFA) policy under UNESCO, which reaffirmed the notion of education as a fundamental human right and urged countries to intensify efforts to address the basic learning needs of all. However,

Chan (2012) proposes that there is a tension between spiritual and neoliberal discourses inherent in its education policies, with the latter gaining ground since the 1997 Asian economic crisis. As school enrolment climbed with no significant increase in results on international educational assessments like PISA (Programme for International Student Assessment) and TIMSS (Trends in International Mathematics and Science Study), the quality of education became a topic of national contention and debate. Through a post-colonial lens, Chan situates the changing Thai educational landscape within its dominant Buddhist culture, arguing that the concept of education quality and future education policies might need to be contextualized and reconceptualised, based on its socio-cultural context of being a predominantly agrarian and Buddhist society.

Another example of how context affects policy is given by Gill (2005). After independence in 1957, the Malaysian government set out on a program to establish Bahasa Melayu as the official language, to be used as the medium of instruction at all levels. For 40 years, the government supported a major program to modernise the language, coining over half a million new scientific and technological terms in Malay. Yet in 2002, the government announced a reversal of policy, calling for a switch to English as a medium of instruction at all levels. Gill explains that this abrupt policy shift was borne out of the local policy context: globalization, the rise of the knowledge economy, the need for workers to communicate seamlessly in the international fields of business, science and technology; and a lack of an attempt to control language use in the private sector, including business and industry; meant that the government had to respond to such pressures urgently.

To understand how education policies change, or do not, means being able to analyse the context in which they are made, and trying to assess how far any, or some, of these sorts of factors may influence policy outcomes.
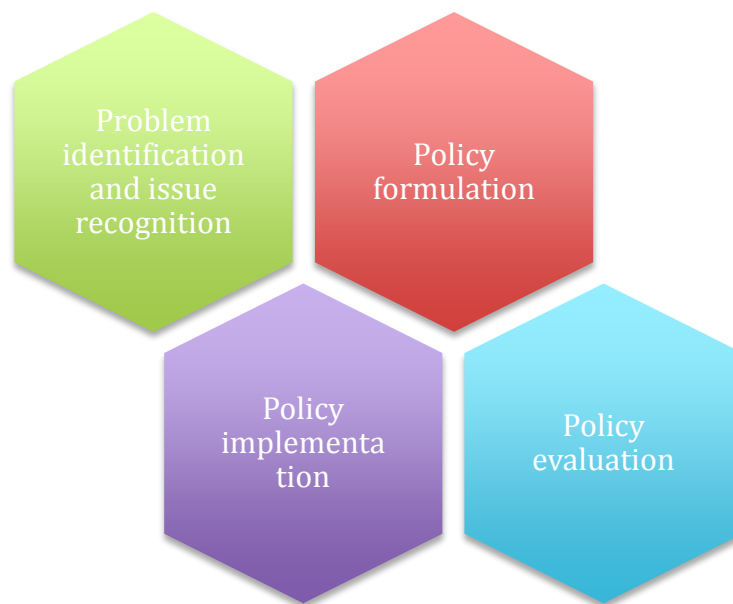
The Policy Process

Process comprises the initiation, development, negotiation, communication, implementation, and evaluation of policies (Buse, Mays, & Walt, 2005), and one way to conceptualize this would be through a 'stages heuristic' (Sabatier & Jenkins-Smith, 1993). As the term suggests, the policy process is broken down into a series of stages, with the recognition that this is a theoretical device or an ideal type, and does not necessarily represent exactly what happens in the real world. It is nevertheless, helpful to think of policy making occurring in these different stages:

> • Problem identification and issue recognition: how do issues get on to the policy agenda, and why some issues do not even get discussed?

> • Policy formulation: Who is involved in formulating policy, how are policies arrived at, agreed upon, and how are they communicated?

> • Policy implementation: this is often the most neglected phase of policy making and is sometimes seen as quite divorced from the first two stages (Buse, Mays, & Walt, 2005). However, this is arguably the most important phase of policy making because if policies are not implemented, or are

diverted or changed at implementation, then presumably something is going wrong—and the policy outcomes will not be those which were sought.

• Policy evaluation: identifies what happens once a policy is put into effect—how it is monitored, whether it achieves its objectives and whether it has unintended consequences. This may be the stage at which policies are changed or terminated and new policies introduced.

Figure 4: The Policy Process

There are caveats to using this framework. First, it looks as if the policy process is linear; appearing to progress easily from one stage to another, from issue recognition to implementation, and then evaluation. Yet it is seldom so distinct or straightforward a process. It may be at the stage of implementation that problem recognition occurs or policies may be formulated but never reach implementation. In other words, policy making is seldom a rational process—it is iterative and affected by interests—i.e. actors. Indeed, Lindblom (1959) characterises the policy process as one which policy makers "muddle through." Nevertheless, the 'stages heuristic' has been around for a few decades and continues to be valuable. It can be used for exploring not only national-level policies but also international policies, in order to understand how policies are applied worldwide in different contexts.

Policy Implementation
Policy implementation has been defined variously as:

- the step that follows policy formulation and is viewed as 'the process of carrying out a basic policy decision' (Sabatier & Mazmanian, 1983, p. 143),

- a process 'to actualise, apply and utilize it [policy] in the world of practice' (Bhola 2004 p. 296), and

- as what transpires between policy expectations and (perceived) policy results (deLeon 1999).

There is an unresolved difference of opinion among scholars about whether policy formulation and policy implementation should be considered as distinct steps, with the latter following the former, or both being part of the policy process.
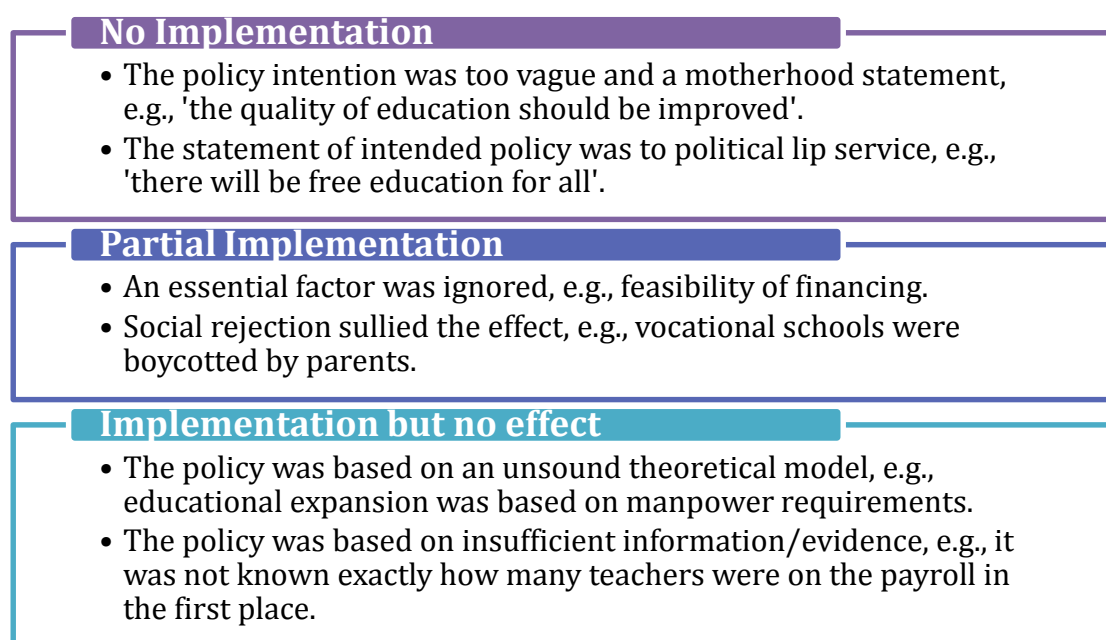
One view of policy highlights distinct phases of policy development, proposing that policy is first drawn up by experts and elected public officials, and then executed by administrative officials (Sabatier & Mazmanian, 1983, p. 146). This view is often more prevalent in government bureaucracy as it promotes the view that policy making is usually done painstakingly by legislators and then fails at implementation because of the issues related to bureaucracy.

A second view holds that there is no clear distinction between policy formulation and implementation, as real policy is formulated not only at the legislative or judiciary level, but continues to be reformulated at the administrative level (Lindblom, 1980, p. 64-70; Trowler, 1998); and also at school level (Hope, 2002). Indeed, Fitz, Halpin and Power (1994) conducted a review which demonstrated that 'formulation' and 'implementation' cannot be readily differentiated in the policy literature. While it might be convenient to separate policy and implementation conceptually, the distinction fades in the messy reality of most policy processes.

In a seminal comparative analysis of East African countries, Psacharopoulos (1989) examined a series of education policy statements across these nations, assessed how successful these policies had been in achieving their original intentions, and concluded that there are three main reasons why an intended educational reform may not materialize or subsequently be seen as a failure (Figure 5):

1) The intended policy was never implemented in the first place.
2) Even if an attempt at implementation was made, it failed to be completed or achieve the minimum critical mass to have an impact.
3) Although the policy was implemented, it did not have the intended effect.

Figure 5: Psacharopoulos' Model of Policy Reform Failure (1989)

No Implementation
- The policy intention was too vague and a motherhood statement, e.g., 'the quality of education should be improved'.
- The statement of intended policy was to political lip service, e.g., 'there will be free education for all'.

Partial Implementation
- An essential factor was ignored, e.g., feasibility of financing.
- Social rejection sullied the effect, e.g., vocational schools were boycotted by parents.

Implementation but no effect
- The policy was based on an unsound theoretical model, e.g., educational expansion was based on manpower requirements.
- The policy was based on insufficient information/evidence, e.g., it was not known exactly how many teachers were on the payroll in the first place.

Today, it is common to observe a 'gap' between what was planned and what occurred as a result of a policy ("partial implementation," or "implementation but no effect"). For example, there are numerous case studies of the impact of education policies 'imposed' by international donors on poor countries showing that they have had less than optimal results for a range of reasons. Riddell and Niño-Zarazúa (2015) argue that while foreign aid has made a tremendous contribution to education in aid-recipient countries—the most tangible outcome of which is the contribution that aid makes to expanding enrolments—there is a considerable gap between what aid does and what it could potentially achieve, especially when the focus is on enrolments and insufficiently on quality. Demonstrating that sustainable education outcomes will not be achieved merely by reproducing yet more successful, but individual projects; the authors caution that development agencies which focus only on demonstrable short-term impact may well be contributing, unwittingly, to an undermining of long-term impact on the education systems and their deepening development, to whose progress they are trying to contribute.

At the same time, much government reform is now focused on trying to devise systems that increase the likelihood that governments' policies will be implemented in the way that ministers intended and that provide information on the impact of policies. For example, the Malaysian government set up a Performance Management & Delivery Unit (PEMANDU) since 2009 to oversee the implementation and assess the progress of policies formulated under its Government Transformation Programme (GTP). The GTP is meant to be a broad-based programme of change to fundamentally transform the Government into an efficient and people-centred institution. Under this system of monitoring, the performance of respective Ministries—measured in terms of whether they meet quantitative targets with explicit achievement dates—are publicly published, as part of the government's commitment to transparency and accountability. Similarly, the UN set its Millennium Development

Goals in 2000 in order to focus the efforts of its own agencies and world governments on quantitative, timed targets to reduce poverty, malaria and AIDS, and increase access to education by 2015. Unfortunately, while primary school enrolment figures rose tremendously, the goal of achieving universal primary education was missed, with the net enrolment rate increasing from 83% in 2000 to 91% in 2015 (Galatsidas and Sheehy 2015).

Understanding Policy Implementation: Top-Down Approaches
'Top-down' approaches to understanding policy implementation are closely allied with the rational model of the entire policy process, which sees it as a linear sequence of activities in which there is a clear division between policy formulation and policy execution. The former is seen as explicitly political and the latter as a largely technical, administrative or managerial activity. Policies set at a national or international level have to be communicated to subordinate levels (e.g. local education authorities, schools, teachers) which are then charged with putting them into practice.

 The 'top-down' approach was developed from early studies of the 'implementation deficit' or 'gap' to provide policy makers with a better understanding of what systems they needed to put in place to minimize the 'gap' between aspiration and reality (that is, to make the process approximate more closely to the rational ideal).

These studies were empirical but led to prescriptive conclusions. Thus, according to Pressman and Wildavsky (1984), the key to effective implementation lay in the ability to devise a system in which the causal links between setting goals and the successive actions designed to achieve them were clear and robust. Goals had to be clearly defined and widely understood, the necessary political, administrative, technical and financial resources had to be available, a chain of command had to be established from the centre to the periphery, and a communication and control system had to be in place to keep the whole system on course. Failure was caused by adopting the wrong strategy and using the wrong machinery.

Later 'top-down' theorists devised a list of six necessary and sufficient conditions for effective policy implementation (Sabatier and Mazmanian, 1979), indicating that if these conditions were realized, policy should be implemented as intended:

- clear and logically consistent objectives
- adequate causal theory (i.e. a valid theory as to how particular actions would lead to the desired outcomes)
- an implementation process structured to enhance compliance by implementers (e.g. appropriate incentives and sanctions to influence subordinates in the required way)
- committed, skilful, implementing officials
- support from interest groups and legislature
- no changes in socio-economic conditions that undermine political support or the causal theory underlying the policy

Supporters of this approach argued that it could distinguish empirically between failed and successful implementation processes, and thereby provided helpful direction to policy makers. Its most obvious weakness was that the first condition was rarely fulfilled in that most public policies were found to have unclear and potentially inconsistent objectives. Other policy scientists were more critical still.

There are several criticisms of the 'top-down' approach (Buse, Mays, & Walt, 2005, p. 123):

- it exclusively adopts the perspective of central decision makers (those at the top of any hierarchy or directly involved in initial policy formulation) and neglects the role of other actors (e.g. NGOs, professional bodies, the private sector) and the contribution of other levels in the implementation process (e.g. regional education district authorities and teachers)
- as an analytical approach, it risks over-estimating the impact of government action on a problem versus other factors
- it is difficult to apply in situations where there is no single, dominant policy or agency involved—in many fields, there are multiple policies in play and a complex array of agencies
- there is almost no likelihood that the preconditions for successful implementation set out by the 'top-downers' will be present
- its distinction between policy decisions and subsequent implementation is misleading and practically unhelpful since policies change as they are being implemented
- it does not explicitly take into account the impact on implementation of the extent of change required by a policy

Fundamentally, critics argued that the reality of policy implementation was chaotic and more complicated than even the most sophisticated 'top-down' approach could cope with and that the practical advice it generated on reducing the 'gap' between expectation and reality was, therefore, largely irrelevant. To emphasize these points, Hogwood and Gunn (1984) created an even more exacting list of ten preconditions for what they termed 'perfect implementation' in order to illustrate that the 'top-down' approach was impractical in most situations:

Figure 6: Hogwood and Gunn (1984)'s Perfect Implementation

1. The circumstances external to the agency do not impose crippling constraints.
2. Adequate time and sufficient resources are available.
3. The required combination of resources is available.
4. The policy is based on a valid theory of cause and effect.
5. The relationship between cause and effect is direct.
6. Dependency relationships are minimal – in other words, the policy makers are not reliant on groups or organizations which are themselves inter-dependent.
7. There is an understanding of, and agreement on, objectives.
8. Tasks are fully specified in correct sequence.
9. Communication and coordination are perfect.
10. Those in authority can demand and obtain perfect compliance.

Since it was very unlikely that all ten pre-conditions would be present simultaneously, critics of the 'top-down' approach asserted that the approach was neither a good description of what happened in practice nor a helpful guide to improving implementation.

Understanding Policy Implementation: 'Bottom-up' Approaches
The 'bottom-up' view of the implementation process is that implementers contribute vitally in implementation, not merely as administrators of policy passed on from above, but as active participants in a complex process that informs those higher up in the system, and that policy should be made with this insight in mind (Buse, Mays, & Walt, 2005). Even in highly centralized systems, some power is usually granted to subordinate agencies and their staff. As a result, implementers may change the way a policy is implemented and in the process even redefine the objectives of the policy. One of the most influential studies in the development of the 'bottom-up' perspective on implementation was by Lipsky (1980) who studied the behaviour of what he termed 'street-level bureaucrats' in relation to their clients. 'Street-level bureaucrats' refer to front-line staff administering social welfare benefits, social workers, teachers, local government officials, doctors and nurses. He showed that even those working in the most rule-bound environments had some discretion in how they dealt with their clients and that staff such as doctors, social workers and teachers had high levels of discretion which enabled them to get round the dictates of central policy and reshape policy for their own ends.

Lipsky's work helped re-conceptualize the implementation process, particularly in the delivery of social services which is dependent on the actions of large numbers of professional staff, as a much more interactive, political process characterized by largely inescapable negotiation and conflict between interests and levels within policy systems. Subsequently, researchers began to focus their attention on the actors in the implementation process, their goals, their strategies, their activities and their links to one another. Interestingly, 'bottom-up' studies showed that even where the conditions specified as necessary by the 'top-down', rational model were in place (e.g. a good chain of command, well-defined objectives, ample resources and a communication and monitoring system), policies could be implemented in ways that policy makers had not intended. Indeed, well-meaning policies could make things worse, for example, by increasing staff workload so that they had to develop undesirable coping strategies (Wetherley & Lipsky, 1977).

Three decades later, studies of 'street-level bureaucrats' still have relevance. Even as Taylor (2007) acknowledges that the rule or policy-making discretion identified by Lipsky as characteristic of the 'street-level bureaucrat' has been severely compromised by British education reform, some local teachers maintain that even if this is the case, there is always scope for discretion because change creates new situations which demand imaginative responses. The exercise of discretion was and is variable, depending to an extent on the subject taught and freedom of the teacher to experiment with teaching methods and interpret management directives, something that the style of school governance can influence.

Insights from the 'bottom-up' perspective on policy implementation have also guided several studies in non-Asian countries of the way in which the relationships between central, regional and local agencies influence education policy—in Spain (Fuente, Vives & Faini, 1995); the Nordic region (Suorsa, 2007); and Russia (Prina, 2015). The ability of the centre to control lower levels of the system varies widely and depends on factors such as political conditions (e.g. the autonomy that regional jurisdictions yield), where the funds come from and who controls them (e.g. the balance between central and local sources of funding), communication processes (e.g. the proper dissemination of information), legislation (e.g. setting on which level of authority is responsible for which tasks), operating rules and the ability of the government to enforce these (e.g. through performance assessment, audit, incentives, etc.).

Relationships between the centre and the periphery in education systems influence the fate of many policies. Sometimes, policies are diverted to some degree during their implementation, while at other times, they are entirely rejected. In the case of Malaysia, the two scenarios actually occurred consecutively.

In a bid to address a perceived deficiency in critical thinking and problem-solving ability that was identified as the main cause of Malaysia's poor performance in PISA and TIMMS, the Education Ministry attempted to 'transform' its exam-oriented education system by incorporating more comprehensive methods of assessment. In 2011, it issued a circular announcing that in 2016, the UPSR— the national examination taken by all students in Malaysia at the end of their sixth year in primary school before they leave for secondary school—format would be changed from a completely written and central examination to one where the written, central examination papers only constitute 60 percent of the total marks, with the remaining 40 percent to be derived from school-based assessment. For four years, hundreds of thousands of teachers and students prepared for this new methodology of evaluation, which encountered teething obstacles during its initial implementation. Following nationwide protests by teachers frustrated by its tedious and inefficient processes, the controversial school-based assessment system was then revamped and simplified. Nor Haslynda (2014) argues that this failure of policy implementation resulted from an incongruence between curriculum policy set from the top (the centre) and classroom practice (the periphery), since there was imperfect cascading of information from policymakers to practitioners, i.e. teachers. In October 2015, the ministry released another circular rescinding the decision made in 2011, which meant that the UPSR would continue to be a 100 percent written, central examination (Zairil, 2015). It was unclear why the Ministry made this about-turn, but in January 2016 the Minister for Education reversed course yet again when he announced that his ministry would resubmit for approval its proposal regarding school-based assessment after consulting with stakeholders (Bernama, 2016).

Understanding Policy Implementation: Relevance to Policymakers
Given the range of frameworks for analysing policy implementation—each of which has something valuable to offer—Elmore (1985) suggests that prudent policy makers should use several approaches to analyse their situation simultaneously, both 'bottom-up' and 'top-down'. A crucial skill would entail being able to map the

stakeholders, their situations, their perspectives, their values, their strategies, their desired outcomes and their ability to delay, obstruct, overturn or help policy implementation. A possible strategy for planning and managing the implementation of reform in the education sector is summarized in Figure 7.

Figure 7: Strategy for planning and managing the implementation of reform

Area or aspect of implementation	Type of action or analysis
Macro-analysis of the ease with which policy change can be implemented	Analyse conditions for facilitating change and, where possible, make adjustments to simplify, i.e. one agency, clear goals, single objective, simple technical features, marginal change, short duration, visible benefits, clear costs
Making values underlying the policy explicit	Identify values underlying policy decisions. If values of key interests conflict with policy, support will have to be mobilized and costs minimized
Stakeholder analysis	Review interest groups (and individuals) likely to resist or promote change in policy at national and institutional levels; plan how to mobilize support by consensus building or rallying coalitions of support
Analysis of financial, technical and managerial resources available and required	Consider costs and benefits of overseas funds (if relevant); assess likely self-interested behaviour within the system; review incentives and sanctions to change behaviour; review need for training, new information systems or other supports to policy change
Building strategic implementation process	Involve planners and managers in analysis of how to execute policy; identify networks of supporters of policy change including 'champions'; manage uncertainty; promote public awareness; institute mechanisms for consultation, monitoring and 'fine tuning' of policy

Source: Adapted from Walt (1998)

Analysing Policy

The education policy framework can be used to analyse or understand a particular policy, or be applied to plan a particular policy. In the classical policy literature, a distinction is made between what is called analysis *of* and analysis *for* policy (Gordon, Louis, & Young, 1977).

Analysis *of* policy is generally retrospective—it looks back to explore the determination of policy (how policies got on to the agenda, were initiated and formulated) and what the policy consisted of (content). It also includes evaluating and monitoring the policy—did it achieve its goals? Was it seen as successful?

On the other hand, analysis *for* policy is often prospective—often commissioned by policymakers, it looks forward and tries to anticipate what will happen if a particular policy is introduced. It feeds into strategic thinking for the future and may lead to policy advocacy or lobbying. For example, the Singapore Ministry of Education (MOE) launched a pilot project in 20 secondary schools to study the impact of a single session system in January 1986. The study concluded that there were several benefits from implementing such a system in schools, since school facilities are freed up in the afternoon. With unfettered access to school resources and facilities in the latter part of the day, schools enjoyed greater flexibility in timetabling and could introduce more after-school enrichment programmes, such as remedial lessons and extra-curricular activities. The study also reported better coordination and consultation among school staff, closer bonds between teachers and pupils formed over informal and organised school activities that took place after school hours, as well as a more cohesive school community as the entire student body and staff could come together. In light of the positive results, the education ministry decided to implement the single session system in all secondary schools by the year 2000 (NLB, 2014).

Two studies undertaken by the Lien Foundation in Singapore illustrate how analysis *of* a policy can help to identify action *for* policy. First, it commissioned the Economist Intelligence Unit (2012) to examine and benchmark early childhood education across the world. The study placed Singapore 12th out of 45 countries that year. For a country that prides itself on topping global education indices, it was a stark wake-up call. The Foundation followed that up with a ground-up study by Ang (2012), drawing upon the views of leading stakeholders in Singapore—teachers, principals, healthcare professionals, social workers, academics, private and non-profit operators and training providers—in the preschool sector, on the issues and challenges facing the local early childhood education scene, and how the sector could be improved. The study revealed that while the preschool sector in Singapore had developed significantly in the preceding years, more work still needed to be done in terms of both the governance of the sector (the way preschool services are managed) and the overall quality of the sector. A list of sixteen lessons emerged from the study, including the call for early childhood to be seen as not just part of an overall national strategy to prepare children for primary schooling, but also as an essential part of Singapore's public education system (Ang, 2012).

Policy Effects of National and International Educational Assessments
International and national large-scale surveys of student achievement are becoming increasingly popular with governments around the world, as leaders attempt to measure the performance of their country's education system. The main reason for this trend is the widely-held opinion that countries will need to be able to compete in the 'knowledge economy' to safeguard the economic wellbeing of their citizens. Whilst benchmark indicators of knowledge economy 'supply' variables—such as investment in education as a proportion of GDP—have been available for a long time, countries had no other way of comparing the effect of their investments and schooling in general upon students' knowledge and skills.

Around the turn of the century, the emergence of large-scale comparative assessments of students' learning (such as the OECD's Programme for International Student Assessment, or PISA) rose to fill this gap. Indeed, countries of all income levels in the Asia-Pacific region are increasingly likely to have participated in a large-scale assessment—local and international—of students' learning. Benavot and Köseleci (2015) highlight that by 2013, 69 per cent of countries in the region had carried out a national assessment. This compares with only 17 per cent in the 1990s. Examining the global growth of national assessments, close to a quarter of all national assessments undertaken around the world between 2007 and 2013 were conducted in the Asia-Pacific region.

This growth in participation has been accompanied by a shift in the use of assessments, from the exploration of differences between education systems to the evaluation of education service delivery and outcomes (Kamens & McNeely, 2009). Assessments are intended to provide information for evidence based policy and decision-making about education inputs and resourcing, with a view to the continuous improvement of learning outcomes.

Concerns continue to be raised about the usefulness of international assessments for policymaking (Goldstein & Thomas, 2008; Andrews et al., 2011) and the use of national high-stakes assessments. Nevertheless, policy- and decision-makers are reinforcing the use of assessments to monitor progress towards education development goals for the 2030 education agenda (UNESCO, 2015) and documenting country participation in assessment activities (UNESCO Institute for Statistics, 2015).

Still, not much is known about the ways in which assessment data have actually been used in education policy to date. Understanding the role of assessments in informing system-level decision-making is a first step towards helping stakeholders improve the design and usefulness of assessments. Moreover, this understanding can help to further discussions about how assessment data can best be used to inform policy and practice and to evaluate the effectiveness of policy reforms. To date, there are only two known studies that have systematically examined the policy effects of participation in large-scale assessments of students' learning:

In the first study, Baird, Isaacs, Johnson, Stobart, Yu, Sprague and Daugherty (2011) investigated the policy response to PISA in six case countries/regions: Canada, Shanghai, England, France, Norway and Switzerland. The authors observed that PISA results appeared to have been used for sabre-rattling political

rhetoric to drive through educational reforms in some of the countries (as in France and possibly in England), and caused shock in reaction to these international test results in France and Norway. They noted, however, that the relationship between substantive policy content and PISA results is not always immediately apparent, and a more thorough study of the temporal relationship between policy thrusts and PISA results is needed, in order to assess the plausibility that PISA causes policy. Furthermore, they recommended an investigation into studying the popular notion that a country's PISA performance is linked to knowledge economy measures.

Proposing a broader and deeper study of these issues in a wider range of countries, including countries whose performances have been weak and those who have improved dramatically, the authors suggest that an outcome from such a longer-term study would be a taxonomy of modes of policy responses from different countries. Such a study would raise awareness of the variety of narratives that can be adopted in response to international assessments, permitting a better-contextualised critique of policy responses in particular contexts, as well as a wider and more nuanced view of the governmental influences that a global institution like the OECD wields.

In the second study, Tobin, Lietz, Nugroho, Vivekanandan and Nyamkhuu (2015) undertook a systematic review of 68 studies that examined the link between participation in large-scale assessment programs of students' learning and education policy in 32 countries in the Asia-Pacific region. Included studies either identified specific cases of assessment results being used by policymakers to inform education reform in their systems, or identified specific cases when assessment results had no impact on education policy in specific education systems. Their review classified the available evidence to address the following questions:

- What types of assessments have impacted education policy in the region?
- What are the intended uses of assessments?
- How are assessment data used in education policy?
- What education policies have been informed by assessments
- What factors influence the use of assessments in education policy?

The authors concluded that:

- Available evidence which publicly examines the link between large-scale assessments of students' learning and education policy is limited. Evidence for such links, for example in ministerial briefings, is likely to be confidential and not available for public scrutiny. Interestingly, the bulk of evidence comes from high-income countries in the Asia-Pacific region, from Australia, Japan and New Zealand.

- Much less evidence regarding the ways that assessments feature in education policy in low- and middle income countries in the region, even though these countries are increasingly likely to have participated in international assessments or conducted their own assessments. As low- and

middle-income countries constitute the majority of countries in the Asia-Pacific region, the relationship between assessments and education policy should be further explored in these contexts to support evidence-based decision-making in the region, while acknowledging that political sensitivities around educational quality and governance often limit the public availability of such analyses and discussions.

- Only a few studies in their review examined factors external to the assessment or education system. External factors can have significant impact on the use of assessments for policy reform—external issues may be related to political or economic instability, for example. Stakeholders who are increasingly focusing on supporting education reform in conflict-affected and fragile states should consider the ways that external factors impact the use of assessment to inform educational reform and evidence-based education policy.

- Assessments are most frequently used to inform system-level policies, which include assessment policies for the further monitoring and evaluation of the education system. Assessments are less frequently used to inform teaching and learning policies, which aim to affect school- and classroom level processes.

- The media and dissemination of assessment results to the public were identified as important factors influencing the use of assessment results in education policy. More work, however, could focus on identifying effective ways of engaging with and disseminating results to the media.

- Stakeholders primarily use assessment data 'to assess and manage education systems' rather than using assessment data as 'a rich source of information to directly address the needs of students' (Montoya, 2015). A more nuanced understanding of the realities of the policy process at international, national and local levels can help policymakers, educators and other stakeholders to more effectively leverage assessment results at appropriate stages of the policy cycle. In this way, assessment results can better support stakeholders in identifying effective levers that will support bottom-up or 'micro' reform in schools (Masters, 2014), in order to improve students' learning outcomes.

In Southeast Asia, the Southeast Asian Ministers of Education Organization (SEAMEO) has developed a new regional assessment for Grade 5 students (aged 10) across ASEAN. Known as the Southeast Asia Primary Learning Metric (SEA-PLM), it is a response to the need for assessment tools to measure learning outcomes for primary grades, recognizes the relevance of learning in the specific cultural context of Southeast Asia, supports the goal of improving quality of education in the region through system-level monitoring of learner achievements in three domains— numeracy, literacy and global citizenship—and builds on existing tools

and assessments already deployed within Southeast Asia such as PISA, the Trends in International Mathematics and Science Study (TIMSS), and the Early Grade Reading Assessment (EGRA). In the project's current phase, participating ASEAN countries are developing and testing the tools and protocols that will be used for assessment, as well as building capacities of national examination and assessment personnel and staff of the participating SEAMEO Member Countries.

Strikingly, this new regional assessment aims to provide an assessment *for* learning rather than an assessment *of* learning (Seameo, 2016). The former approach—also known as formative assessment—aims to provide ongoing feedback for instructors' teaching improvement, and for students to discover their weaknesses and avenues for improvement. The research provides firm evidence that such an assessment approach substantially enhances learners' achievements across age levels and contexts (Black & Wiliam, 1998).

This is opposed to a traditional assessment of learning (AoL) approach—also known as summative assessment—which primarily evaluates student learning at the end of an instructional unit by comparing it against some standard or benchmark. While such a summative assessment approach is useful for purposes of grading, reporting, and accountability, it is a blunt instrument for aiding teachers and students improve their instruction, or modify their approach to individual students (Guskey, 2003).

Singapore: A Case Study
This section explores policy formulation and implementation in the Singaporean context by adopting the Education Policy Framework proposed in this paper. It achieves this by briefly examining policy formulation locally, before analysing certain features of the Ministry of Education (MOE) in implementing policy. The section concludes by presenting an overview of recent education reforms, and what these reforms might mean for policymakers and researchers.

Approaches to Policy Formulation
Quah (2016) contends that the approach to policy formulation by the government and senior civil service in Singapore is typically pragmatic. The government is willing to introduce new policies or modify existing ones as circumstances dictate, regardless of ideological principle. For instance, budgets introduced during 2008 and 2009—when a global financial crisis decimated many economies—necessitated a large rise in public spending and a shrinking of the budget surplus to mitigate the impact of the downturn. These expansionary budgets went against the grain of the government's hitherto heavy commitment to fiscal conservatism (Ghesquiere, 2007; Das, 2010; Asian Development Bank, 2012).

Within this pragmatic manner, education policy responses to problems have in some cases been proactive and in others, reactive. The Center for Strategic Futures, set up in 2009, is at the forefront of anticipating problems and proactive policy formulation—futurists from this agency are now part of MOE's Corporate Planning Office, where they strategically forecast and anticipate ground realities to prepare schools, students, and teachers for the future. For example, the Ministry is acutely conscious of an advantage gap between students, as society becomes increasingly

stratified. How might education continue to be a fair enabler? Consequently, the Government has begun to increase attention on quality, affordability and accessibility of pre-school education; at the same time, it is also concerned with how it can maintain the public's trust in the education system and its prestige, so that good teachers are attracted (Masramli, 2013).

In other cases, the policy response has been reactive, addressing a problem that has existed for some time and is well recognized. Quah (2016) argues that adjustments to the bilingual policy have been reactive: Even though it has been a cornerstone of the country's education landscape since the late 1960s, changes were only made from the late 1990s onward, with the most recent arising from the recommendations of the report of the 2010 Mother Tongue Language Review Committee (Lee, 2012). The modifications were intended to aid the learning of the mother tongue (especially Mandarin) for students who struggled to acquire the necessary proficiency. Many were Chinese students from largely English-speaking households, who had faced frustrations learning Mandarin. This had been a problem for quite a number of years. In 2009, the former Prime Minister Lee Kuan Yew admitted that recent changes were indicative of a government only becoming "wise after the event" (Han et al., 2011, p. 251).

Emphasis On Efficiency, Cost Saving and Avoidance of Waste
In 2003, the Government launched an Economy Drive (ED) in order to minimise unnecessary financial expenditure. The MOE reviewed its space requirements and design details for new schools, and found that it could reduce its budget to develop new schools by 10%, without compromising on providing students with a conducive environment for learning and interaction. As a result, $30 million in savings in development expenditure were reaped in 2003 (Challenge, 2004).

As part of this ED, the Government also set up the Cut Waste Panel (CWP) in 2003 to elicit suggestions from the public on where the Government can streamline its spending whilst continuing to deliver quality services. The panel works with relevant agencies to evaluate those suggestions, and in some instances, can ask that costs be adjusted, rules removed, programmes stopped, or fees and charges reviewed, if it finds them unnecessary. Since its founding, the CWP has received more than 5,000 suggestions which resulted in savings of more than $11 million (Ministry of Finance, 2007). For instance, a public suggestion to the CWP led to the opening up of hitherto under-utilized school fields for public use outside curriculum hours under the Dual-Use Scheme (Ministry of Finance, 2007).

In 1997, the Government introduced what it called Work Improvement Teams (WITs), to improve its practices and services across ministries and statutory boards. These are work groups comprising six to ten staff members in the same office or section, who are given the task of identifying areas of work where improvements could be made or problems exist, and then to determine, plan and implement a solution. Awards are given for viable solutions with the best projects given a gold award. The WITs programme is based on the idea that agencies must and can continuously improve, and has become institutionalized in the form of an annual

MOE ExCEL Fest, which celebrates schools and teachers' success in innovation and enterprise. For example, Hougang Primary School won an award in 2014, for its formulation and implementation of an initiative to improve the school environment to make teaching and learning more conducive for everyone—the teachers and students had created a vertical green wall as a way to cool the school. In addition to bringing relief and comfort in lowering their classroom temperature, students would also learn about how plants contribute to reducing ambient temperature, and the relevance of vertical gardens in land-scarce Singapore (Schoolbag, 2014).

Inter-Agency Cooperation
In an increasingly complex world, the Education Ministry does not, and cannot afford to operate in a silo. Whole-of-Government (WOG) thinking is a matter of necessity, as public issues become increasingly more complex and multi-dimensional. Such an approach allows governments to tap on diverse knowledge, viewpoints and ideas from across the public sector, with officers from various agencies coming together to broaden and deepen policy formulation and implementation. Involving different agencies in such exercises has its benefits, especially when an issue is multi-faceted and covers different policy areas. Sharing of expertise and knowledge, and the articulation of different perspectives, increases the chances of reaching balanced and workable decisions on how best to implement a policy (Jones, 2016).

Indeed, MOE's policy formulation and implementation efforts have always been intimately linked to the economic imperative to create good jobs for Singaporeans. Since independence, the country's Economic Development Board (EDB) has provided input to MOE on the skills requirements that the country needs, in order to implement economic and industrial strategy. If the Government seeks to increase the number of firms operating in the field of research and development, there will necessarily need to be a corresponding increase in the pool of qualified scientists and engineers.

One way to address this need would be to increase the international recruitment of such personnel, but educationally, the MOE would simultaneously promote the study of science and technology subjects, and increase the number of government scholarships given to Singaporean students to study in top universities around the world and locally. All this work is undertaken not only by the EDB and MOE, but also in conjunction with other agencies such as the Council for Professional and Technical Education (CPTE), the Singapore Productivity and Standards Board (Spring Singapore), and the Workforce Development Agency (WDA) (Siow, 2011). Taken together, these disparate but interlinked agencies provide sophisticated mechanisms to ensure when and by how much, the country's desired future skill needs are to be met specifically. These targets are then used to decide the output from the broader education system, the more specific technical and vocational education system, and even employers' training activities.

More recently, the MOE set up a new statutory board to drive and coordinate the implementation of SkillsFuture—a national policy initiative that provides Singaporeans with the opportunities to develop their fullest potential throughout life, in the form of credits and courses that they can use to take up classes for their personal or professional mastery. Called SkillsFuture Singapore (SSG), the statutory

board involves a reorganisation within Government, rather an increase in the overall number of statutory boards. Given existing inter-agency complexities of running and developing SkillsFuture, the Government decided that the new statutory board, staffed with specialists from various public agencies, would be able to better facilitate greater inter-operability between the vocational, academic, and adult training qualification systems that SkillsFuture encompasses (Ministry of Manpower, 2016).

Public Consultation
The WOG approach to policy formulation and implementation also meant that the Government needed a coordinated and single avenue to engage and connect with the citizenry in the policy process. An existing Feedback Unit was restructured in 2006 to move beyond gathering public feedback on national and social issues, to become the lead agency for engaging and connecting with citizens, and was re-named REACH (Reaching Everyone for Active Citizenry @ Home).

Through online discussion forums, blogs and e-polls conducted under the REACH web portal, public consultations are regularly undertaken on a wide range of policy issues and the feedback collected contributes to the making of policy. In 2014 (the latest year for which figures are available), the number of feedback inputs sent to government agencies through REACH hit almost 39,000, and feedback on the REACH Facebook platform garnered more than 17,000 inputs from January to October of the year, compared to the 11,000 in the same period the previous year. While it is not always possible to definitively point out a causal relationship between received feedback and policy pronouncements, some 11,000 visitors to REACH feedback booths in locations like shopping malls and at transport hubs contributed close to 7,000 feedback inputs on topics including the Applied Study in Polytechnics and ITE Review (Aspire) (REACH, 2014).

In a clearer example of how public consultation shaped the policy formulation and implementation process, in 2002 a Committee for the Review of Junior College/Upper Secondary Education was formed to develop a revised junior college (JC) curriculum framework and to articulate a vision for JC/Upper Secondary education. The committee held a major public consultation exercise which included feedback sessions, focus group discussions, internal consultation sessions, dialogue sessions, and study trips to several countries.

The consultation process led to feedback that helped the committee to shape its recommendations (Tan, 2004):

First, the committee recognised the need to broaden the curriculum and inter-disciplinary orientation, and noted strong public feedback on the need for flexibility and individual choice. As a result, the committee recommended that JC students should take at least one Arts/Humanities or Mathematics/Science subject outside their main area of specialisation.

Second, there was considerable public concern about the workload and stress on students. As a result, the committee recommended that the content of each subject be trimmed so that the overall load would be comparable with that of foreign education systems.

Additionally, the MOE also picked up several important learning points from the consultation exercise (Tan, 2004):

Besides providing public views, consultation was also a useful means to *communicate* the intent and thinking behind the issues to stakeholders. This was based on the belief that every contact with the public should be used as an opportunity to engage them and to build understanding and support for public policies.

Second, MOE decided on two key messages for the review, and communicated them at the various consultation fora. Initially, however, the public missed the point that the review would improve JC curriculum for *all* students, and not just the best students. Consequently, in addition to communicating its two key messages for the review, MOE placed more emphasis on its message that the revised JC curriculum would benefit all students. In this instance, public consultation had helped to fine-tune the public communications strategy.

In a final example, in 2015 REACH launched a public consultation on a proposed early childhood development centres (ECDC) regulatory framework. The proposed ECDC regulatory framework sought to raise the quality of early childhood (EC) care and education by harmonising the regulatory frameworks for kindergartens and child care centres. At the close of the four-week public consultation exercise, REACH received 35 written comments from operators, parents, EC professionals, and industry partners, held three town hall briefings involving 750 representatives from pre-school operators, organised a focus group session with 14 representatives from pre-school parent support groups, engaged industry partners, such as the Education Services Union (ESU), and gathered feedback from online forums and media articles (REACH, 2015). The then-Minister for Social and Family Development even shared about the public consultation exercise to his Facebook followers, encouraging them to participate (Tan, 2015).

In its published reply to the summary of responses received, REACH acknowledged the views and concerns of the various stakeholders: it clarified certain points of its proposed regulatory frameworks, but also assuaged concerns that there would not be sufficient time and support for EC operators to adjust and transit smoothly into the new ECDC regulatory framework. In its closing remarks, REACH thanked everyone who had participated in its public consultation exercise and announced that it would continue to refine the framework in response "to the constructive feedback given" (REACH, 2015).

Rigorous Audit Scrutiny
There is substantial accountability in the use of financial and physical resources, enforced through the Office of the Auditor-General (AG). The AG annually audits the education ministry and other public education entities such as polytechnics and Institutes of Technical Education (ITEs), under three main domains:

1) It evaluates the extent of compliance with the relevant statutes and stipulated procedures.

2) It assesses whether a proper disclosure of accounts has been published, which reflects fairly and accurately all the financial transactions undertaken, and

3) It determines whether proper accounting and transactional records have been kept, and if adequate controls were exercised to prevent non-compliance and irregularities in revenue collection and spending (Auditor-General, 2014, p. 1–4).

Furthermore, from time to time, the AG undertakes an in-depth audit, known as a 'selective audit'. This provides a more detailed assessment of compliance, and highlights, too, 'excess, extravagance or gross inefficiency leading to waste and whether measures to prevent them are in place' (Auditor-General, 2014, p. 1). Indeed, the AG's report is so rigorous that in two successive years, it highlighted lapses by more than a dozen ministries and statutory boards. Particularly, in 2015 the ITE was singled out for irregularities in the award and management of contracts for the appointment of a cafeteria operator and school operator, while Singapore Polytechnic was flagged for failing to recover a significant amount of costs for the secondment of its a senior officer on its staff to a subsidiary, Singapore Polytechnic International (CNA, 2015). Finally, the AG expressed concern that three educational institutions did not impose charges—or imposed below market rate charges—for use of their car parks. It averred that such practices were "tantamount to providing hidden subsidies for vehicle parking," sparking a 2016 review of carpark charges at all schools (Lee, 2016).

Accountability in policy implementation and the use of resources is reinforced through the Corrupt Practices Investigation Bureau (CPIB), which is part of the Prime Minister's Office and responsible for implementing the Prevention of Corruption Act. The CPIB investigates complaints regarding alleged corruption by public officers, and any other evidence that indicates malpractice and misconduct. With wide powers of investigation, the agency is able to arrest suspects, cross-examine them, question witnesses, search premises, seize assets and recommend prosecutions to the Public Prosecutor. In a recent case, a former principal of River Valley High School (RVHS) was charged with lying to the MOE about his sexual relationship with a vendor to whom he had awarded more than S$3 million worth of contracts over seven years, and for giving false information to the CPIB (Chong, 2015).

Recent Education Reforms: 2013 to Present
In 2013, the Ministry of Education (MOE) unveiled several major changes to its approach towards teaching, learning, and the curriculum, as part of its efforts to promote a more "student-centered, values-centric" education. The impetus behind this vision of a student-centric, values-driven education was primarily about nurturing Singaporean students to be equipped with the core skills and competencies to be economically productive and to flourish in a VUCA (volatile, uncertain, complex and ambiguous) world, as well as to imbued them with "Singaporean" values to be successful, moral and committed citizens of the country (Chua, 2013). Its vision was buttressed by four major thrusts:
1) "Every Student, an Engaged Learner"
2) "Every School, a Good School"
3) "Every Teacher, a Caring Educator"
4) Every Parent, a Supportive Partner"

In tandem with this broad educational paradigm, MOE also announced a series of specific initiatives and policy proposals. It launched a Framework for 21st Century Competencies and Student Outcomes and a new Character and Citizenship curriculum, incorporating these into the practices and cultures of all schools. School league tables were abolished, and the award criteria for school achievement awards were modified—academic achievements were no longer the primary focus of these awards; instead, the holistic development of students was now highlighted. The Minister of Education underscored his Ministry's seriousness in focusing on students' holistic development in a work plan seminar speech that year: "To deal with the demands of a VUCA environment, good grades in school are not enough. In fact, they might not even be relevant" (Low, 2014).

In a strong signal that the MOE was serious about making "every school a good school," it appointed at least 10 senior principals to head schools in the heartland from the following year. It was hoped that these "most experienced and well regarded" principals would leverage their experience and expertise to spread best practices and inject fresh perspectives in their new schools.

In fact, the Ministry's push to redress the overemphasis on academic results, and shift it to a student's holistic development begun a few months before, in 2012. Then, it announced that the top scorers in the Primary School Leaving Examination (PSLE) would no longer be named. It followed that up a year later, by not even revealing the highest and lowest scores, which had been listed on every pupil's result slip since 1982. This policy of not naming the top scorers extended to the other national examinations—the N-level, O-level and A-level exams. The Minister explained that it was a way for him to recalibrate the system, and demonstrate that other intangibles" of education, such as character, values and socio-emotional development matter, and "matter greatly, too" (Davie, 2015).

At the same time, it was announced that PSLE grading would be revamped. Students would no longer be given previse aggregate scores; instead, they could be given letter grades and placed in "wider bands"—the same way 'O' and 'A' level examinations are marked. Under the revamped grading scheme, each grade might carry a certain number of points, and these can be used to decide which secondary school a child qualifies for—the way O-level grades are converted into points for admission into polytechnics and junior colleges. The Ministry explained that removing the aggregate score would reduce stress on pupils, since they could potentially focus on a more holistic development of their skills and interests, instead of chasing that final few marks in order to boost their aggregate score, as it currently is in the existing examination format (Ng, 2013).

Whither These and Other Education Policies?
The impacts and results of the Ministry's slew of policy moves circa 2013 are still too early to parse fully, given that policy decisions such as the specifics of the new PSLE grading system have not been announced yet.

Given that this paper is more concerned with fleshing out a method to broadly understand all aspects of policy formulation, implementation, and evaluation, it did not attempt to undertake a full-fledged analysis of policy. However, for the purposes of illustration, this section lays out how the outline of how an analysis *for* policy (*see*

section 3.5) might be conducted using the Education Policy Framework proposed in this paper:
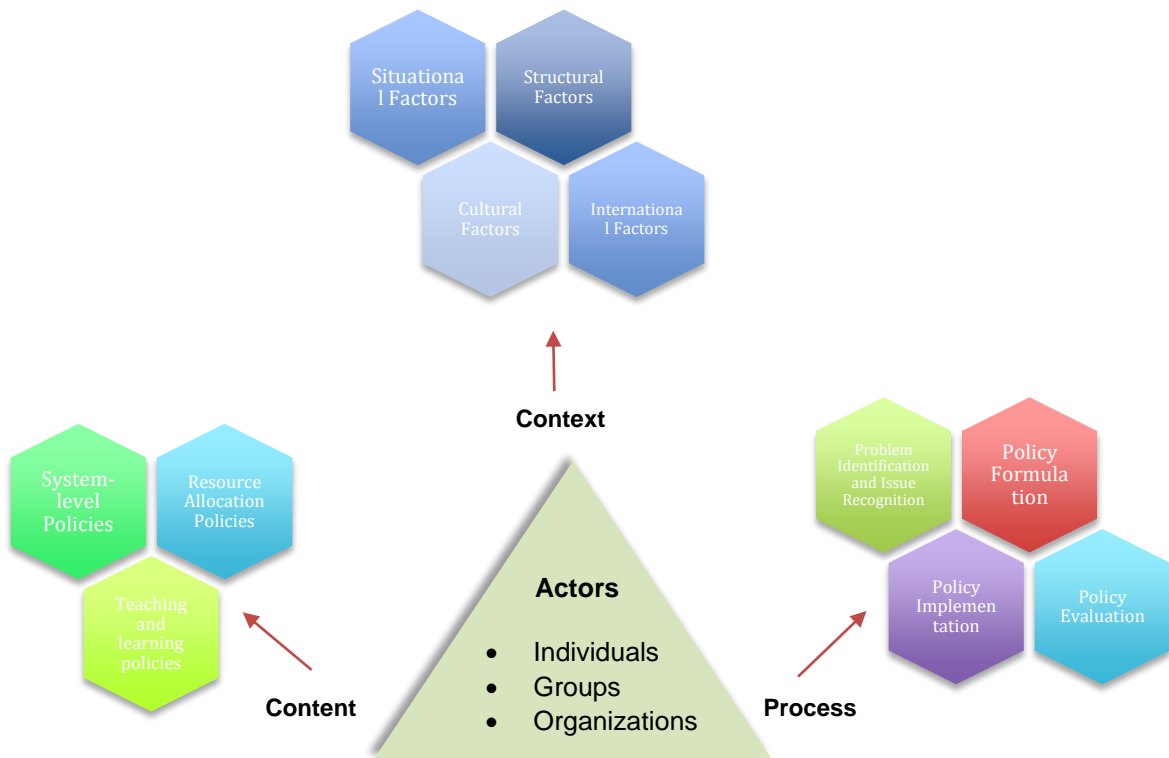
Content: The PSLE grading system will be revamped, and an announcement on this is due in 2016. PSLE grading policy can be seen as a reflection of students' academic ability, and an educational waypoint that signifies how much they have mastered in the early stage of their education. It can also be seen as a resource allocation issue, since students' aggregate scores are used for school placement, and there are only limited places in popular schools. Will the proposed grading system be perceived as straightforward, transparent and objective by this measure of allocating students to schools on the basis of academic merit?

Actors: Schools, students, the Ministry, parents, and even private tutors are all stakeholders that will be impacted by this policy move. How will they react vis-à-vis one another, should there be a substantial tweak to the current grading system? Will there be significant disagreement or buy-in from certain quarters? In a bottom-up perspective of policy implementation, will street-level bureaucrats (teachers) implement the new PSLE grading system any differently from how Ministry-level officials envision? How will the new grading system impact jurisdictions or overseas schools that follow the Singapore examination system?

Context: Structurally and culturally, what are prevailing normative views towards the PSLE? How do the various actors socially construct the exam? Will the new grading system lead to ambiguity, more stress, or precipitate a shift towards other markers of student success? Can sudden social and political events affect how this policy is received by stakeholders, or render the current basis for such a PSLE grading system moot? Does changing the grading system affect student learning

outcomes? More crucially, will changing the grading system lead to any substantive positive change in the way people currently construct the PSLE? Indeed, the policy has to be examined in its paradigmatic context. If, despite efforts to tweak the policy, there is still a narrow emphasis on academics and paper qualifications, will anything change?

Process: What are the driving forces behind this change? Who was/is involved in formulating this policy change, how is this policy arrived at, agreed upon, and how is it/will it be communicated? How will this policy potentially be implemented, and will it achieve its objectives, or lead to unintentional consequences? Will stakeholders have enough time to respond and adjust to the changes when they are implemented? And will stakeholders have viable avenues to give feedback on this policy?

Conclusion

The paper's review of the current literature on policy analysis led to several insights: First, the policy implementation literature puts to lie the notion that there can be a generalized theory of policy implementation. After all, unique social, cultural, economic, and political contexts affect specific policy or reform implementation in different localities. Second, while numerous studies exist on policy implementation in the continent, these have mostly focused on case or country studies, rather than comparative cross-national studies. Third, there is a significant research gap on *education* policy implementation in Asian countries.

It then proposed a heuristic for scholars and policymakers to analyse education policy. By synthesizing their various contributions to the policy analysis literature, this proposed framework acknowledges the importance of looking at the content of policy, the processes of policy making, how power is used in education policy, and the wider social context.

In the next section, the paper surveyed the policy implementation literature, noting that top-down approaches were inadequate in understanding policy. Instead, a fuller appreciation to understanding policy implementation would necessarily include a 'bottom-up' view of the implementation process as well.

The education policy framework is relevant to policymakers in two ways: an analysis of policy can be either retrospective, or prospective.

Given that international and national large-scale surveys of student achievement are becoming increasingly popular with governments around the world, the paper then examined how policymakers worldwide have responded. Numerous studies have investigated this question, but a few important gaps remain. Particularly, not much is known about the specific ways in which assessment data have actually been used in education policy to date. Further, more studies are need that examine the ways that external factors impact the use of assessment to inform educational reform and evidence-based education policy.

Finally, the paper examined in broad strokes the education policy landscape in Singapore. It delineated policy formulation and implementation in Singapore, analysing certain features of the Ministry of Education (MOE) in implementing policy, before surveying recent education reforms and demonstrating how the education

policy framework can be used to analyse proposed policy reforms *before* they are implemented.

In a close to the discussion, it would be instructive to view policy and education through an ontological lens: that is, what is the very nature of education? What purpose might it conceivably serve, and are current hegemonic notions of it still relevant? Whom might certain conceptions of education be relevant to, and what are the implications if certain ideals or notions are upended and reconceptualised? For example, should young people become educated to get prepared to enter the workforce, or should the purpose of education be focused more on social, academic, cultural and intellectual development so that students can grow up to be engaged citizens and happy human beings? Certainly, the debate about the purposes of education is a perennial one, and like most social phenomena, there are no definitive answers.

Far from an academic exercise, how governments, organizations, and people understand education has practical implications for education policy. Luckily, Strauss (2015) points out that with careful planning, education *should*, and *can*, prepare students for life, work, *and* citizenship. After all, the learning of technical, scientific, and the humanities are relevant to all three domains; while critical thinking, creativity, interpersonal skills and a sense of social responsibility all influence success in life, work and citizenship. Private troubles can have public consequences: unhappy personal relationships can and do affect work performance; unconducive workplace practices or unemployment impinge on family life; and uninformed and disengaged citizens help shape poor policy choices that cycle back into life, work, and citizenship.

With the right political circumstances, developed and developing countries all have the potential to formulate and implement policies promote education for life, work and citizenship. Major shifts in curricula and professional development will have to occur. Substantial engagement in this multi-modal way of understanding education would be a significant cultural change, and time and patience would be required to see any significant change. If students are to be intellectually and emotionally engaged in their own learning, content will have to be personally and socially relevance for students—current modes of learning assessments might have to be remodelled, or, in some cases, jettisoned. In a constantly evolving technological and social context, learning would be less about content, and more about learning *how to learn*. Finally, a move towards a more inclusive way of understanding education will necessarily involve addressing inequities in well-paid employment, health care, food, and housing security. Just as education can lead to substantial outcomes in these areas, so too these domains affect the direction of education.

Note

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