



**Hongda Lin**

**EXPERIMENTAL INSTRUMENTALITY**  
**Networked efforts towards school transformation**

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**Networked efforts towards school transformation**

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# 1 INTRODUCTION

Educational change has been criticised as a term serving social reproduction rather than transformation. Understanding how contradiction drives practice in the educational field will be helpful in this investigation. Accordingly this study will examine a process of interaction between instruments and actors crossing the spheres of policy making and school practice by an empirical case. The main primary rationale supporting this instrumental approach to the investigation can be found in the work of Karl Marx. In his *Capital*, Marx argued that the contradiction of social relations, which is the source of revolution, is embedded in currency is a category of dialectical logic (Ilyenkov, 1977). In other words, currency not only mediates the characteristics of capitalism, but also brings up the impetus of social transformation. Following this thinking, this study aims to conceptualize a zone mediating educational change, namely, where an activity which is able to mediate a network of sporadic innovations scattered in the field of education in which different agents and organizations coordinate with one another. Through this instrumental approach, the research may be able to identify the movement driven by contradiction in the educational field.

This idea can be further developed based on the concepts forged in the approach of Cultural Historical Activity Theory (CHAT). The term “remediation”, for example, was developed to describe the practice of overcoming organizational inertia and the habits which regulate individuals’ actions (Miettinen, Paavola and Pohjola, 2012: 2). CHAT theorists argue that “Transformation of artefacts, that is collective elaboration of shared mediational artefacts, is an essential part of the transformation of practices.” Considering the concepts of collective labour and artefact— an object made by humans —employed in CHAT enable a possible way for understanding the transformation of collective activity. Accordingly, this approach presents a perspective for the problematization of issues regarding educational change or reform.

One critical problem in research of educational change is that the reciprocal relations between agents and organizations in the educational field have been studied and understood using concepts such as “power,” “hierarchy,” “structure,” or “system” for many years. These points of view take “level” and “power relation” for granted as social facts, without questioning how they came to exist. Agents and organizations, however, are actually organized by many artefacts, such as policy documents and bureaucracies that can be understood as shared mediational artefacts. These artefacts surely set limitations for reciprocal interaction between individuals and organizations; they nonetheless also provide possibilities for change if they are “elaborated collectively”. By understanding these

abstract concepts in concrete ways, this study may be able to contribute to policy study and change in real life.

But what kind of activity could cause these shared artefacts to be collectively elaborated? Namely, how does collective elaboration take place? How can this activity be identified? What are its impacts on the existing relations between, for example, school practice and policy making, when the collective elaboration of shared mediational artefacts takes place? These are the questions that the study will explore and answer.

This research intends to study social experiments in regard to educational change. To actualize this idea, the research will examine a policy case in Taiwan and then will problematize its process as research questions.



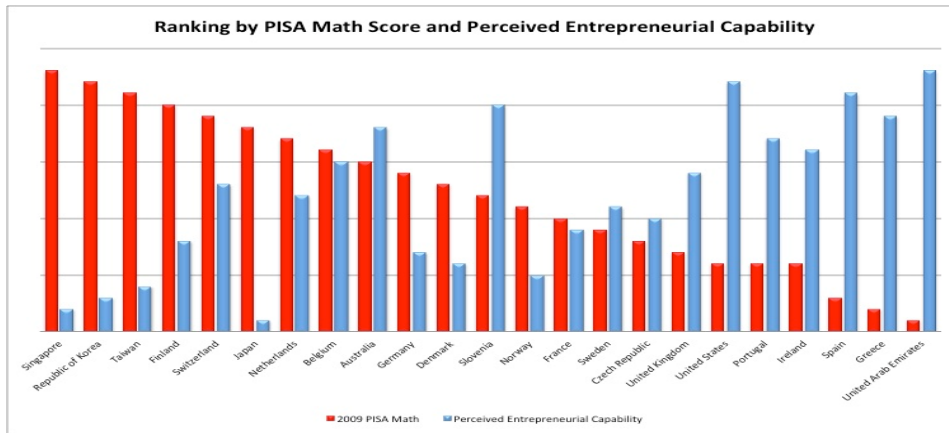
## **2 THE SCHOOL ACTUALIZATION PROGRAMME IN TAIWAN**

The School Actualization Program (SAP) is a policy designed to improve the quality of senior high schools in Taiwan. It is a policy intervention evolved by actors from the settings of policy making and school practice. By studying the longitudinal data collected from this policy process, I will be able to observe the development of policy instruments and the emergence of contradictions in the collective coordination in the multi-level organizational field.

The research plan will first introduce an educational problem shared among Asian countries and Taiwan in the following part, then will explain the SAP policy formulated to resolve this problem. After that, the agents – the hybrid group – responsible for the SAP policy will be introduced. To depict the problem in this case, the research plan will finally describe the organization of educational activity and the contradictions manifested in both school activity and policy-making activity.

### **2.1 Problems in Taiwan's education—A test-oriented schooling model**

The test-oriented model of school education is omnipresent in the countries sharing the culture of Confucianism, such as China, Japan, Korea, Taiwan, Singapore, and a few other countries in south-eastern Asia. This model appeared in this region around the 1950s after the Second World War, even earlier than the spread of neo-liberalism to school practices globally. One phenomenon in recent years corresponding to this model is students' low confidence in their entrepreneurial capability. As the figure below reveals, students in Asian countries presented high PISA scores, while their scores on perceived entrepreneurial capability were low. This connection may imply a potential challenge for their economic and social development.



**Figure 1.** Ranking by PISA math score and perceived entrepreneurial capability (2013/03/09 retrieved from: <http://zhaolearning.com/2012/06/06/test-scores-vs-entrepreneurship-pisa-timss-and-confidence/>)

The symptoms of the test-oriented model in these countries are similar to one another. In Taiwan, one of the most serious problems is “diploma-ism”, which evolved from high-stakes testing for educational tracking which started in the 1950s and is still present in school education. This term refers to the idea that all pedagogic activities are oriented toward a test or diploma. The competition for test results produced homogenous standards for student learning, such as school rankings and student academic rankings. In fact, the competition for these rankings makes many students and schools feel like failures because of their relatively bad performances.

A test-oriented model of schooling, therefore, is problematic for students’ learning and societal equality. Firstly, academic performance competitions drain students’ interest and problem-solving ability. The information written in textbooks and school activities connect to tests instead of their daily lives. Consequently, students learn almost nothing other than how to take tests after graduating from school. Moreover, this model hinders social redistribution and vertical social mobility. In fact, evidence-based research points out that from 1997 to 2000 in Taiwan, 78% of the students in National Taiwan University – one of the best universities – had graduated from the 20 best senior high schools in Taiwan. Forty-three per cent and 35% of the students graduating from “the first girl high school” and “the first boy high school” in Taipei city were selected by tests to enrol in National Taiwan University in 1999 (Luo, 2002). Correspondingly, students who are not studying in the best senior high schools were not confident in their school education. Thus, they went to “cram schools” after their studies in order to obtain higher test scores. As a result, the number of cram institutions for satisfying these needs has surged in recent years. Concomitantly, educational

investment from the private sector is rising. Without supplementation from the public sector, this implies that educational resource distribution and social mobility are getting stagnating. Only rich people and rich cities can receive extra educational resources. Terms such as diploma-ism and test-oriented instruction, therefore, have been used to problematize school education in several educational policies.

In the name of social justice and the cultivation of capability, the government of Taiwan planned to launch 12-year basic education in 2014. This policy prolongs basic education from 9 years to 12 years. According to the published policy document of 12-year basic education, it adopts two techniques. Firstly, it abolishes the annual matriculation exam between lower and upper secondary education, which purports to track students' academic performance. Secondly, basic education will be free; public financing will support student's tuition for grades 1-12 for both public and private schools.

## **2.2 The School Actualization Program—One policy programs preparing for the launch of 12-year basic education**

Under the umbrella of the 12-year basic education policy, the Taiwanese government also launched several policy programs for preparing to launch the 12-year basic education. Two of these policy programmes were started in 2006 to improve quality of upper secondary education on both vocational and regular tracks. Interpreted literally from the Chinese, these are the Programme for Optimizing Vocational High School, and the Programme for Optimizing Senior High School. The programmes were launched as trials in the first year, 2006, and officially implemented in 2007. This study will focus on the second policy program, which aims at improving senior high school education, as the main focus. In this study, I call this policy programme the School Actualization Program (SAP).<sup>1</sup>

The basic idea of the SAP is that the policy program receives applications for school projects, supervises their implementation, and reviews the results every year. Schools can obtain extra funding for project implementation if they receive permission to do a school project; meanwhile, they also have to accept an audit and a school consultation from the Ministry of Education. The SAP has four tools to actualize this idea. These are the school project review, the school convention, school consultations, and the audit mechanism. These four items are implemented according to an annual schedule.

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<sup>1</sup> The name School Actualization Program was developed by one of actors in the policy-making process, but not all of the actors in the policy-making process agreed to use this English name. I use this name in the research plan because it makes more sense in English.

**Table 1.** The annual SAP schedule

<b>April</b>	<b>May</b>	<b>October - November</b>	<b>February</b>	<b>March - April</b>	<b>April</b>
School project review	School convention	First consultation	School report(audit)	Second consultation	School project review(audit)

The SAP schedule runs annually. Every year from April, a committee is assigned by the Ministry of Education to review school projects for school developments. Schools which pass the review and receive permission to implement their projects are required to attend a school convention in May, where the concepts and administrative procedure of SAP are explained. During October and November, consultants assigned by the Ministry of Education visit schools, diagnose problems and provide suggestions for school improvement. The consultants are teams of one principal from senior high school and one university professor for each SAP school. In the following February, SAP schools have to report their implementation for an audit. The second consultation is held again during March or April. After that, the SAP will call for applications for school projects and process the review of projects in April. Opinions and reports from the consultations usually have an influence on the school project reviews.

Contrary to its stable annual schedule, the operation of the SAP underwent changes between 2008 and 2010. Traditionally, policy programs in Taiwan are organized by only one program investigator and are accompanied by an expert group to provide solutions. However, this top-down working model shifted toward consensus seeking from 2008. The project investigator was not the sole decision maker. Instead, decision making was gradually spread from being done by one program investigator to the expertise group.

### **2.3 The hybrid group for SAP policy making and implementation**

The hybrid group is the agent responsible for SAP operation. This group comprises professors from universities, principals and teachers from senior high schools, and public servants from the Ministry of Education.

The organization of the SAP hybrid group has changed at least three times since 2006, and so have artefacts of the SAP implementation. In its first year, a consulting group used by the Ministry of Education developed the idea of the SAP. With the aid of the Ministry of Education, the SAP was set up with a review committee and a schedule of implementation, and so on. The head of this SAP hybrid group accordingly had a very strong decision-making.

In 2007, SAP was commissioned to an expert. Just like many other programs in Taiwan, the government found a familiar and well-known expert to be the project investigator, made a contract with him, and granted him financial and administrative support to implement the SAP. A consulting group was organized to assist him. The expert, therefore, had a strong decision-making in every part of SAP implementation. For example, he was expected to chair every hybrid group meeting and to make the final decisions for SAP implementation. At the same time, he was responsible for the annual report of the policy implementation. This kind of top-down relation in the operation of a hybrid group is typical in Taiwan.

However, this typical organization started to change during the following year. The political situation of implementing the SAP became unpredictable when the cabinet was reorganized in 2008. Another expert from a university was appointed to implement the SAP. However, she was not connected to the Ministry of Education. Two legitimate crises for implementing SAP emerged from this point. Firstly, this expert had no connection with the Ministry of Education; secondly, she was not a well-known expert. These two crises were manifested, for example, as many doubts her during the SAP hybrid group meetings and policy-making process. This project investigator was almost powerless in a powerful position.

Interestingly, the SAP hybrid group changed its form of cooperation. “Team” identity had emerged and been shared among the group members after a couple of meetings. They shared the processes of decision making and problem recognition. One year later, the members of this group were willing to share the responsibility for SAP implementation. In 2010, the Ministry of Education even gave them the title of the SAP core team.

During the period from 2008 to 2012, the hybrid group developed many instruments for school transformation. Some of them were revised from earlier designs, such as the criteria for school project reviews and the annual scheduled activities in the SAP implementation. However, most of the instruments were created by this hybrid group in response to challenges emerging from the policy implementation, for example, school annual questionnaires, workshops, school databases, and stages of school development. A complex of policy instruments, thus, was formulated for the purpose of school transformation.

Although some members of the hybrid group have changed, the main project investigator and most of the members in this hybrid group have remained since 2008. The names of its members and their basic information in 2008 are listed below.

**Table 2.** Participants of the SAP hybrid group

<b>Name</b>	<b>Place of employment</b>	<b>Title</b>	<b>Sex</b>
<b>P.Y., Chen</b>	National Taiwan Normal University	Assistant professor	Female
<b>H.C., Hsieh</b>	National Tsing Hua University	Professor	Female
<b>W.Q., Zhong</b>	National Kaohsiung Normal University	Associate professor	Male
<b>Q. L., Yang</b>	National Kaohsiung Normal University	Associate professor	Female
<b>G.Z., Lin</b>	National Changhua University of Education	Assistant professor	Female
<b>S. L., Huang</b>	National Chung Hsing University	Professor	Female
<b>Z. Y., Tzeng</b>	National Tsing Hua University	Associate professor	Male
<b>J. L., Tom</b>	China University of Science and Technology	Professor	Male
<b>P. T., Lieu</b>	National Beigang Senior High School	Principal	Male
<b>L. J., Yeng</b>	I-Ning High School	Principal	Female
<b>C. Y., Wu</b>	National Yilan Senior High School	Principal	Male
<b>H. J., Chang</b>	Pan-Chiao Senior High School	Principal	Male
<b>W. H. Chen</b>	Taipei Municipal LiShan High School	Principal	Male
<b>P. C., Yang</b>	National Taichung Girls' Senior High School	Principal	Female
<b>J. T., Huang</b>	National Keelung Girls' Senior High School	Teacher	Male
<b>Y. H., Lin</b>	Ministry of Education	Staff	Female
<b>S. F., Jian</b>	Ministry of Education	Staff	Female

## **2.4 A brief history of the bureaucratic system—The organizational form of educational activity**

An introduction of the historical aspect of the formation of the bureaucratic system can outline the challenge that the SAP was facing and the contradiction embedded in the process of policy implementation.

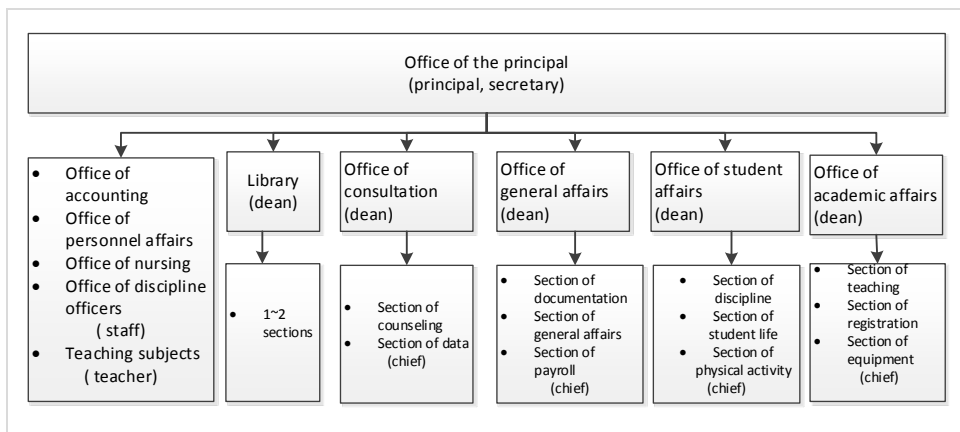
Bureaucratic systems were built and are still very strong in many East Asian countries' governments after the Second World War. Taiwan is not exceptional amongst them. A bureaucratic system has been strong in the education system in Taiwan since the beginning of the 20<sup>th</sup> century. It extends from the central government to local schools for the purpose of controlling population with the concept of a nation. The idea of control and its controversial aspect can be illustrated with the notion of the "centre-boundary" relation. This relation can be seen in Taiwan's political geographical map and the collective consciousness of its people. This geographical map and notion of "central-boundary" are expressed in the material documents and techniques of pedagogy as well as in the form of Taiwanese government, which is built up by the Kuomintang (KMT), a political party, which moved the government from mainland China to Taiwan. For those governments built in China, Taiwan is an island located to the south-east of mainland China. It has been situated at the boundary in terms of empire and nation for centuries.

This kind of historical consciousness can be identified in the material governance tools of the government of Taiwan created by the KMT, which moved the government from mainland China to Taiwan due to the losses in the Chinese Civil War. To the KMT, Taiwan was a base for fighting back into mainland China. Accordingly, Martial Law, a special law set for preparing for war in the Constitution, was in effect until 1987. Correspondingly, school curricula and techniques of pedagogy in Taiwan served to maintain the consciousness of the nation and to transmit knowledge that favours the KMT and mainland China. The evidence is easy to find in school textbooks, where written texts reflect this power relation. In fact, most textbook content since 1994 has been constructed from the perspective of mainland China instead of a local point of view. As a consequence, students graduating from basic education were familiar with China's history, geography, natural resources, and literature, but knew almost nothing about Taiwan. This kind of curriculum not only implied who the school education was treated towards, but also reflected the one-way relation between the knowledge producers and receivers. This form of epistemology in schooling made students become passive learners and obedient citizens.

Nonetheless, this schooling problem has been recognized and gradually improved by society when Martial Law was abolished in 1987. A remarkable event was when the grassroots educational reform movement arose in 1994 and appealed for the decentralization of the administration of educational finances,

curricula, and educational personnel. However, many historical remnants of the dictatorship still exist. In fact, the form of bureaucratic system remaining in the school organization nowadays still influences the habitual behaviours of people’s interactions with the schooling structure.

According to legislation from the Ministry of Education, a school structure must be organized in a bureaucratic way. A regular school organization is depicted accordingly as Figure 2. In Taiwan a senior high school usually is led by a principal, and organized in a bureaucratic way which comprises six to nine offices with one to four sections under each office, plus classrooms. Office deans and section chiefs are responsible for administrative affairs in the school; teachers take care of the curriculum and teaching. Each senior high school also has some soldiers assigned by the government in the office of discipline officers, which represents the symbol of nationality and the historical remains of dictatorship.



**Figure 2.** The organization of a school

This bureaucratic organization of a school is an important artificial channel implementing educational policy. Nonetheless, it is a source for generating contradictions in social relations. Bureaucracy is a kind of fossilized collective behaviour in the educational field; however, conflict may be generated when it confronts innovative actors from local standpoints of either the school activity or the policy-making activity. Problems manifesting contradictions rooted in the bureaucratic system in the case of the SAP can be found either in the interaction between teachers and school administrators in school activity or in the interaction between the SAP hybrid group and government administrators in policy-making activity.



## **2.5 Problems of the bureaucratic system in the school activity**

In schools, the bureaucratic system no longer influences the practices in the classroom in recent decades. In addition to the spatial separation of the school building structure, this is also due to strong teacher agency. Teachers in Taiwan generally have a high social status and a strong vocational autonomy. These conditions were institutionalized when teacher unions were built up systematically from local schools to the national level after the educational reform in 1995. Accordingly, teachers generally consider administrative assignments passed through the bureaucratic system in schools to the classroom as a kind of inconvenience. Moreover, this results in mistrust between school administrators and teachers, which makes the classroom practice more isolated. The negative view of teachers on communication with school administrators makes teachers hesitate to communicate with them, which concomitantly prevents information from rising through the bureaucratic system from teachers. Many policy programs aimed at improving teaching and learning, therefore, are hindered in this situation.

Unsurprisingly, the schools participating in the SAP also had this problem. Nonetheless, some schools have seemingly changed through the SAP policy process. In fact, many of the schools' employees recognized the benefits of taking part in the SAP, according to an interview conducted by the SAP hybrid group in 2010. Schools were able to implement curriculum experiments inside the school; the experimental pedagogic practice also spread throughout the campus. Problem-based curricula, for example, are in development in some schools. By the scheduled activities in the SAP policy program, one kind of social contagion for school change is spreading among schools. This developmental process provides a source for understanding collective transformation. Further investigation is required.

## **2.6 Problems of the bureaucratic system in the policy-making activity**

The policy-making activity in Taiwan was supported by a technocracy before 1980s and dramatically changed after the abolishment of Martial law. However, the bureaucratic system and the habitual behaviours acting upon it still remained, and part of the technocracy was replaced by expert groups. This new complex of policy-making activity, thus, is contradiction laden. In the case of the SAP policy program, the chiefs of the Ministry of Education and its assistants in the bureaucratic system have absolute positions of decision making, even though many policy programs, including the SAP, have been commissioned to expert groups. Concomitantly, conflicts are generated when dominant opinions from

the bureaucratic system confront the SAP expert group. In fact, this happened several times because administrators and politicians in the central government intended to reap the merits produced in the SAP policy process. The power from the bureaucratic system attempted to influence the mechanism designed by the expert group in the SAP.

One concrete conflict can be demonstrated by the numbers of participating schools in the table below. In 2012 there were 263 schools in the SAP. This number was augmented the most in 2012 when the government announced that 80% of senior high schools would be included in the SAP in that year. This decision was made over the SAP mechanism designed by the hybrid expert group. In 2006, SAP had 11 schools participating in its first trial. This number of participating schools increased gradually in the following years. In 2011 47% of school applications were accepted. However, the hybrid group was forced to change the standards of the school project review in order to meet the government requirement in 2012. This resulted in a 99% acceptance of school applications. This decision to increase the acceptance of school applications was made by the chiefs of the Ministry of Education because their adoption of the principle of “management by object” in policy implementation. In order to meet the policy object in a very limited schedule, the public servants just simply asked the hybrid expert group in the SAP to lower the threshold of the examination of school project applications. This change brought a disturbance into the existing policy design and influenced the motivations of those schools participating in the SAP.

**Table 3.** Numbers of participants and acceptance in the SAP

Year	2006	2007	2008	2009	2010	2011	2012
<b>School in the SAP (%)</b>	11(3.27%)	66(19.64%)	106(31.55%)	146(43.45%)	189(56.25%)	213(63.39%)	263(78.27%)
<b>Number of applications</b>	-	95	137	94	86	51	66
<b>Accepted applications (%)</b>	-	66(69.47%)	41(29.92%)	40(42.55%)	43(50%)	24(47.06%)	65(99.9%)

In short, observation of the operation of the bureaucratic system in the SAP case can reveal the processes of manifesting contradictions. In the school activity, this was seen in the conflict between school administrators and teachers. On the other hand, in the policy making-activity, this was seen in the conflict between public servants and the SAP hybrid expert group. By tracing the processes of problem resolution in both activities, the path of school transformation in the

educational field might be found. Within the scope of CHAT, this research plan may find a way to understand this experimental process and depict the potential accumulating in this process.

## 3 RESEARCH QUESTIONS

I will examine four questions on the process of interaction between policy-making activity and school practice in the case of the SAP. The first two concern instrument development in policy-making activity and school activity; the third focuses on the relation between contradiction and the re-organization of policy-making activity; the fourth question investigates the formation of the social experimental community by analysing the results of the previous three questions.

### **3.1 How did the SAP hybrid group develop artefacts for school transformation and recognize problems of implementation?**

The artefacts of SAP in the first two years were nothing more than scheduled items plus other granted administrative and financial resources. However, since the third year of implementation, the artefacts have become increasingly more complex. After the fourth year of implementation, the SAP hybrid group even developed a division of labour corresponding to the artefacts, complexity, namely, each member was responsible for different parts of the artefacts in the SAP implementation. This development could not have been predicted in the beginning. By tracing the process of instrument development and problem recognition in the SAP case, the answer to this question may contribute to the understanding of tool remaking in policy-making activity.

### **3.2 How did schools use the SAP instruments in their practices, and what problems have been solved?**

The question inquires about the interaction between the schools and the SAP artefacts. As a policy setting its goal to improve school quality, it is important to look into the practices in schools to understand the way that the school works with a policy instrument. To clarify what kind of potential of the SAP has been mediated in terms of school transformation, the research will investigate how and to what extent the school elaborated the policy artefacts. Alternatively, it can be questioned what kind of the SAP artefacts were employed in school practice? What tools were generated in the schools to respond to them? What kind of contradiction emerged in this process? Through these questions, this inquiry may contribute to the understanding about the potential that remediation could bring.

### **3.3 What contradiction between the bureaucratic tradition and the new experimental methods emerged in the cooperation of the SAP hybrid group?**

The hybrid group was an organization in the policy-making activity connected to the traditional bureaucratic system and innovative school practice. It is a general term regarding the members cooperating in the SAP policy-making activity. However, many changes took place in this group. Its members changed constantly, and its form of cooperation changed from time to time. The shifts in its working form actually corresponded to problem generation and policy instrument production along the policy process. Put differently, the SAP hybrid group is an intermediate unit which is responsive to the policy situation. By looking into what problems have been solved in these changing forms of cooperation and identifying what problems still remained, the study may reveal contradictions in the policy practice and contribute to the understanding of the relation between contradiction and the re-organization of policy activity.

### **3.4 How did instrumentality develop? What characteristics of instrumentality arose in the SAP policy process?**

The SAP process is different from the typical policy-making activity in Taiwan. New artefacts such as policy instruments and school tools connected to innovative local practice were developed. This diverged from the habitual behaviour of bureaucracy in governance, which presents the institutional logic of appropriation. To identify the germ cell of the dynamics of transformation in the policy process, it is important to examine a concrete case. Based on the study results from the former three questions as well as a historical analysis of educational thinking in Taiwan, the research may reveal the instrumentality developed in this process and recognize its characteristics. The result, therefore, may illustrate a temporal dimension of the potential of a social experiment. This inquiry thus may contribute to the understanding of the formation of a social experiment community.

To clarify the method of investigation and the perspective of Cultural Historical Activity Theory, a reflection on these approaches is needed. In the following part, I discuss the relations of educational change, the role of educational research and collective imagination; then the research plan will review the relevant research. After that, I will introduce the key concepts which will be used in this study.

## 4 THEORETICAL FRAMEWORK

Educational change and the methods of causing educational change connect to collective imaginations. These all relate to issues of collective survival, such as national competition, industrial production, or a competitive workforce. For example, in the context of national competition during the Cold War, the United States announced the National Defence Educational Act, which problematized scientific education and launched an educational reform as a reaction to the successful launch of the Sputnik in the Soviet Union. Similar dramas have been replayed from time to time. In the 1980s, again, the government of the United States published *A Nation at Risk*, which used words<sup>2</sup> indicating a crisis to connect school education with the domestic workforce when it found that the industrial outcome of the US had decreased.

All these imaginary connections between education and survival not only direct public attention to the issue, but also propose methods for understanding, implementing, or evaluating educational change. The development of policy program evaluation studies provides an example. Since the 1960s, several evaluation models have been produced in the US to meet requirements on program implementation (Fitzpatrick, Sanders & Worthen, 2004). Each model has its specific way to organize data, interpret the results, and implement evaluations. What is interesting is that the concepts formations in these models of program evaluations actually mediated interpretations and methods engineered towards an imaginary outcome of education change. The *Scientific Research in Education* report published in 2002, for instance, legitimized a certain idea of research in the background of the No Child Left Behind Act—a policy program requiring evidence-based strategies (Feuer, Towne, and Shavelson, 2002). The rule in this case transmitted one strict image of doing educational research and also impacted school practice in a certain way.

However, research regarding to educational change is not necessarily meant to facilitate change. In the following part, this research plan will discuss approaches for studying school transformation, and after that, elaborate on the key concepts of this research accordingly.

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<sup>2</sup> For example it states: “If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war.”

## 4.1 Approaches to studying school change

Three approaches can be used to make sense of school transformation and its relation with policy. These research genres have been represented in the educational areas of different countries and international organizations. The story of Finnish education, for example, has been explained using these approaches.

The first kind of research can be called the approach of systemic change. This approach emphasizes a balance between autonomy and accountability, and proposes a systemic design and techniques refined to produce and reproduce educational reform (e.g. Hargreaves, Halász & Pont; 2006, Schütz, West & Wöbmann, 2007; Webb, Vulliamyb, Sarja & Hämäläinen, 2006). It presumes that school transformation is situated in the context of the knowledge economy. This research genre also employs terminologies from industry and business to describe educational change (see, e.g. Fullan, 2001; Hargreaves & Shirley 2009). In this perspective, terms such as “flexible accountability” (Sahlberg, 2009: 27) and “system leadership” (Hargreaves, Halász & Pont, 2006) have been used to make Finnish education into a successful story. To those readers familiar with terms such as autonomy or accountability, the Finnish experience presented in this kind of study is more clear and understandable.

However, this genre hazards the risk of misleading readers. It does not reflect the historical sources and social conditions of the terminologies used in the study. A certain theoretical framework is imposed on the experience of education change. Arguments of this kind actually mediate a theoretical perspective rather than the experience itself. The experience in real life is limited by the lexicon. In other words, the approach using this kind of genre reproduces a certain theoretical framework abstractly instead of revealing the change process or practices from a local standpoint.

The second approach is quite different from the former one, and might be tentatively the called approach of history analysis. This perspective takes the first approach as an object to study. By connecting the approach describing school transformation with historical context, this approach is able to problematize the former methodology and disclose the ideologies presupposed in it. For example, Kincheloe (1991) has proposed that a meta-analysis of ideology of educational history should be studied in order to unearth social theory, hegemony, and the relation of ideologies. Gale (2001) makes a further contribution to critical policy sociology methodology by gathering similar interests together, such as policy historiography, policy genealogy, and policy archaeology. Along the same lines, Ball (2003, 2008) also uses the term policy ratchet to grasp the flow of England’s educational changes, argues that “social empty” and crises likewise will be generated by the trend of neo-liberalism. The Finnish story has also been discussed in this way (e.g. Simola, 2005; Rinne, Kivirnuma and Simola, 2002).

The approach of history analysis is able to trace the historical context through historical sources (e.g., Aho, Pitkänen and Sahlberg, 2006) and delineate certain human signs. Foucauldian discourse analysis, for example, enables depicting the appearance of culture. It has been applied to reveal what neo-liberalism looks like in educational policy and in the area of political research. Similarly, it proves the alienating nature of human labour, uncovering the disciplinary function of the mediation of a collective concept. However, it also risks simplifying the alienation, revealing only the passive side of artefacts/discourse externalized by humans.

The alienation of human labour not only disciplines the human him/herself; it is also a source for generating an artefact which is capable of resolving the problem and being shared as a common property. Notwithstanding this consideration, some studies in this approach places a heavy emphasis on the social production aspect of artefacts and discourse, and therefore neglect the potential of the subject and the active role of humans in the process of socialization and production. In spite of coding human experience passively in academic work, it also reproduces this image accordingly for readers, reproducing the drama between the actors in school reform, even while engaging in uncovering historical forms of artefacts or discourse.

At this point, the problems of these two approaches towards school transformation research have been identified. On the one hand, the evolving aspects of experience, such as social interaction and the historical source, should be considered in a change process. Therefore, the limitation of using a static model to describe a change process, where the theories only focus on refining a combination of tools, may be overcome. On the other hand, the dialectic characteristic of interactions between humans and artefacts/ discourse should be taken into account. Through this, the alienation of human labour may be studied more profoundly, thus also revealing the potential in the process of educational change. In short, social interaction, historical evolution, and the dialectics should be considered while studying school transformation. An approach which is capable of describing human activity is therefore needed.

The third approach is based on Cultural Historical Activity Theory, which might meet the interests of this study. This approach is founded by L. S. Vygotsky, A. N. Leontiev, and V.V. Davydov. It has been further developed by Engeström (1987) for the study of collective learning. In general, the approach applies a dialectic method from Karl Marx onto the historical evolution of human activity and studies the mediation of cultural artefacts. The idea of a “development lag behind learning” proposed by Vygotsky shifts the creative side of the dialectical process to humans. By observing how an individual uses a cultural artefact to solve a problem or overcome a challenge, the learning process and the development of higher psychological processes can be studied.



This notion may bring some insight to educational change research as well. Miettinen (2013), for example, takes this approach along with the notion of institution to study the Finnish basic educational system. He uses the concept of “institutional learning” to grasp both horizontal learning and vertical learning from experimental practice to legalization. Through interaction between different institutions and artefacts elaborated collectively, instrumentality is developed to fill up the gap between the concepts introduced in new policy and the local individual. This explains the change process in Finland from a parallel school system to a comprehensive school system, from the governance of control to the governance of trust.

However, applying institutional learning to a case study also risks a dangerous loss of individuals’ voices when the organization and institution have spoken for them in the historical trajectory. Accordingly, any personal imagination and contradiction confrontation taking place might be too vague to be explained through a collective learning process. In other words, a general characteristic of an organization represented by actors may eliminate human potential in the mediation process. Subsequently, the zone of proximal development cannot be recognized. The difference between learning and development, therefore, is vague as well.

Cultural Historical Activity Theory provides a lens to observe school transformation. Studying a key activity connected with individuals in an educational change case may be helpful in exploring the notions of institutional learning and collective learning.

## **4.2 Key concepts used in this study**

Concepts from CHAT may shed a light on the interaction between the instrument development and transformation activity in policy making and school education. Five main concepts, ideality, remediation, instrumentality, mediation, and contraction, will be applied to indicate the direction of the research question, and to develop a framework for further analysis.

### **4.2.1 Ideality**

Social experiment communities are assumed to aim towards forming an ideal. However, a social experiment involving a collective is a co-evolving process rather than being achieved by a monologue. The ideal, a concept derived from idealism and the Kantian philosophical explanation favouring descriptions of thinking inside the individual brain, can hardly grasp this kind of object of collective activity. On the other hand, a social experiment in which the participants do not have anything in common with one another is limited and incapable of supporting development. An idea for school transformation would become an

empty concept and make no difference in reality if it is abstract to the school actors. In other words, the research needs a word which is capable of expressing an object in a collective and its mediating process.

Ideality may suit this requirement of the research. It is a notion E. V. Ilyenkov developed based on Marx's idea of objectifying activity into artefacts and the concept of practice. In this way, "Ilyenkov offers us a new, dialectical materialism in the form of radical realism that treats the thinking subject as located in material reality, in direct contact with its objects" (Bakhurst, 1991: 215). Through labour, humans transform the natural environment into a social-cultural circumstance or things and reform it constantly in human activity. "Ideality, according to Marx, is nothing else but the form of social human activity represented in the thing. Or, conversely, the form of human activity represented as a thing, as an object" (Ilyenkov, 1977:86). This elaboration reveals a history embedded in a thing and a concept. History is a reified dialectics movement between things and activity, in which ideality would be generated. "Only in the reciprocating movement of the two opposing 'metamorphoses'—forms of activity and forms of things in their dialectically contradictory mutual transformations—DOES THE IDEAL EXIST" (Ilyenkov, 1977: 99). The concept of ideality implies that the absolute idea never exists. It appears in the dialectic process and is particularly visible at the moment of problem-resolution, at the place where the contradiction is happening.

The notion of ideality, therefore, supports this study in two ways. Firstly, a thing and a concept not only have functions, but actually also present a certain reified history of a dialectic process. Accordingly, the things and concepts adopted in SAP case, including policy-making activity and school activity, should be studied in terms of a reified process. To revive this process, the research has to look into the process of problem resolution, which connects to the present things being used.

Secondly, ideality is presented as the characteristics of things and concepts. A group of stable operations of things and the usage of a concept can indicate their characteristics. From another standpoint, a mix of unstable operations and usage can show the location of a contradiction. This notion, therefore, can be applied to categorizing the group of things and concepts in the SAP case. On the one hand, ideality helps to locate the contradictions in the SAP; on the other hand, the historical reasons for the legitimacy of reform may be found by discerning an ideality embedded in things and concepts scattered relatively steadily in the temporal dimension through a historical analysis. This may point out a possible object to study as a germ cell of collective transformation.

#### **4.2.2 Artefact, instrumentality, and remediation**

According to the point of view stated above, artefact not only signifies ideality, but also plays an important role in the transformation process. Marx W. Wartofsky (1973) developed the concept of artefact to discuss historical perceptual development and to debate most philosophical theories of perception based on seventeenth-century psychology. From his standpoint, representation mediates the function of an artefact in a human's perception. Some representations have even been made into secondary artefacts, differentiating them from primary artefacts. Primary artefacts are those directly used in production. Secondary artefacts, which carry an externalized representation, are those used in the preservation and transmission of the acquired skills or modes of action.

However, a single artefact could not function independently in a collective practice; a complex of tools is usually applied. Our life world in society has been stuffed with connected artefacts. Similarly, in transformation a group of networked artefacts are supposed to develop during an experimental period. Otherwise, the innovation will be isolated. Engeström, Puonti, and Seppänen (2003) have explain this development with the concept of "instrumentality", "The concept of instrumentality implies that the instruments form a system that includes multiple cognitive artefacts and semiotic means used for analysis and design, but also straightforward primary tools used in the daily practice and made visible for examination, reshaping and experimentation." Here the idea of a network of primary artefacts and secondary artefacts is included in instrumentality. This concept has been applied in CHAT intervention situations, such as in the change laboratory.

The development of instrumentality actually requires collective effort. Understanding the transformation process requires the investigation of the collective elaboration of tools in a problem-resolving setting. This idea is described in the concept of remediation, that is, to "collectively adopt or elaborate (new) tools to solve problems emerging from developmental contradiction (Miettinen, Paavola and Pohjola, 2012)". An instrument is a kind of extension of human hands, with which the human indirectly connects to circumstance and is able to change the circumstance in a production activity. Through remediation, humans are able to remake the given instruments according to the contradiction they confront.

In addition, the historical difference between instrumentalities and the motivation of the activity of remediation requires concept of tertiary artefact, which was developed by Wartofsky. He defined imaginatively constructed artefacts, abstracted from their direct representational function, as tertiary artefacts; by this, a perceptual activity becomes historical (Wartofsky, 1973). In other words, the imaginative concept, the tertiary artefact, makes instruments coherent and distinct from each other. This also explains the motivation of the activity of reme-

diation, the possibility that people come from different positions and join in a collective re-elaboration.

These concepts, on the one hand, point out that networked artefacts and the process of connecting artefacts to each other must be studied. On the other hand, the distinction between artefacts will help in recognizing the differences between instrumentalities and their characteristics.

### **4.2.3 Contradiction**

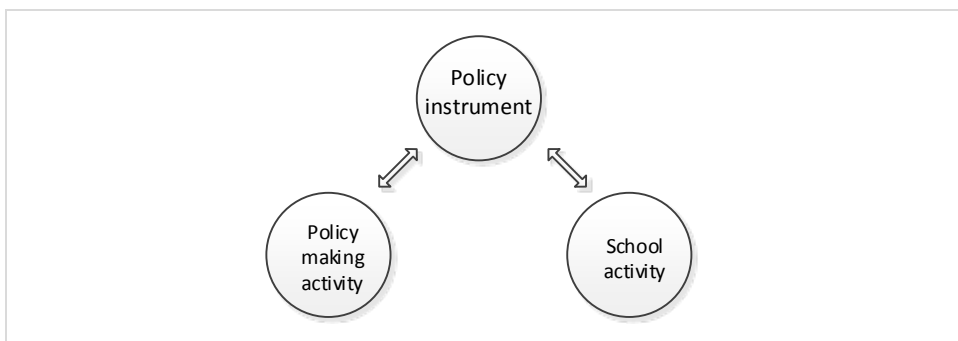
Based on the concept discussions above, contradiction seemingly occupies a theoretical place to indicating transformation. From the dialectic-materialistic perspective, contradiction is the central source of change and development (Ilyenkov, 1977). As historically accumulated structural tensions within and between activity systems, contradictions generate and manifest themselves in problems, conflicts, and disturbances (Engeström, 2000). The primary contradiction of activities in capitalism is that between the use value and exchange value of commodities. This primary contradiction pervades all elements of our activity systems (Engeström, 2000).

The study will trace the contradictions or problems triggered from the conflicts between these two values.

# 5 WORKING HYPOTHESIS OF THE SAP POLICY PROCESS

## 5.1 A working hypothesis

There are three main points in the Taiwan case. These are 1) the change in concepts for curriculum development in school activity, 2) the policy instrument formation in the SAP, and 3) the change in the agent from a pyramid model to a team model in the policy-making activity. According to the data, the qualitative change in the agent in the policy-making activity is accompanied policy instrument development, which not only influenced the hybrid group itself but also had an impact on school transformation. In short, the policy instrument development acted as a mediator in the SAP policy process.



**Figure 3.** A model of the SAP policy process

This two-way mediation format is a prototype of the analysis of the key activity, which is able to mediate a network of sporadic innovations. To develop the research questions, a theoretical framework is needed to problematize the case.

According to the concepts discussed above, the working hypothesis could be formulated and depicted as follows. In this figure, the policy instrument is generated from the policy-making activity and influences the school activity. By taking part in the SAP, on the one side, the school is confronted with things embedded in the policy instrument; concomitantly contradiction is generated from the school activity, which has been ongoing for years before this confrontation.

On the other side, the policy-making activity itself has also been influenced by policy instruments and contradictions generated from school activity. The policy instrument can stabilize the form of policy making-activity, which not only means that it guarantees the typical power position of the hybrid group in this activity, but also implies that the typical hybrid group will be replaced by

either another project investigator or another cooperating form because of the conflicts expanding and escalating constantly from the contradiction embedded in the form of SAP activity. However, the hybrid group, as the agent of the policy maker, might be able to find the contradiction, recognize the problem, and solve it by remaking the policy instruments. In this case it would then be able to prolong its role as the policy maker in the SAP.

The policy instrument becomes more complex after going through this interaction process between policy-making activity and school activity. Concomitantly, the ideality will be objectified into this complex of instruments so that the participants in this interaction thereby know where and how to go. This co-evolving process will generate a new instrumentality from the older form of things and activity in the policy process. This may present as a social experiment. In the end the experimental instrumentality may be captured and visualized as socially significant.

This working hypothesis could be illustrated as below. The numbers from Q1 to Q2 refer to the corresponding research questions.

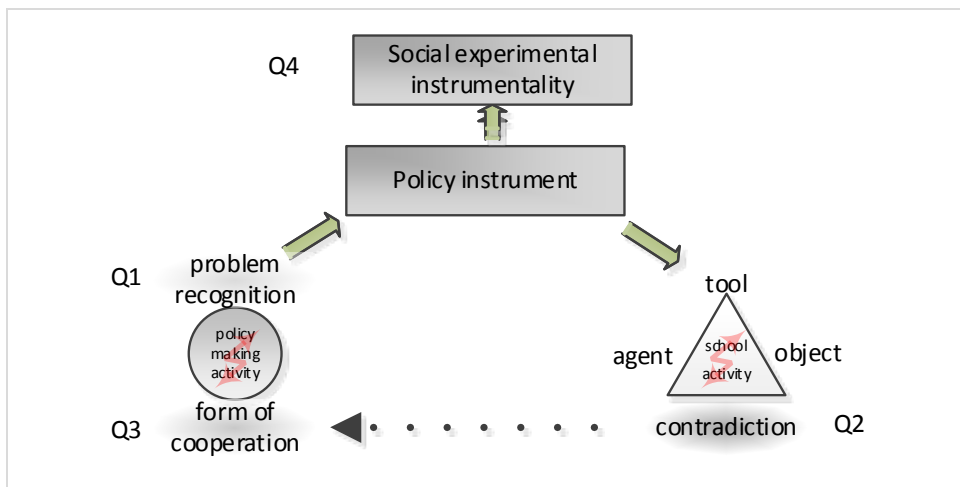


Figure 4. Working hypothesis

## 5.2 A framework for analysis and some preliminary results

According to the conceptual framework and working hypothesis, a preliminary framework for this research might be comprised of policy instrumentality, the agent, the object of the school activity, and the contradiction/ problem. Their preliminary explanations in this study are written in the table below.

**Table 4.** A preliminary framework of analysis

Policy instrumentality	Agent in the school activity	Object of the school activity	Contradiction/ problem
Refers to a complex of 1) The IDEA of school development 2) RULE 3) MEANS (TOOLS)	Who takes care of the school project	The object taken by an agent in the school	Contradiction /problem recognized by the agent

Three concepts, idea, rule and mean, are used to explain aspects of policy instrumentality in order to fit the context of the research. The rule is the requirement written on the policy document; the means/tools include funding, symbols, expertise, and the school network. With these definitions, policy instrumentality might have a more clear relation with the object of school activity and contradiction in this study.

Based on this framework, the SAP case in Taiwan can be analysed to test the viability of the working hypothesis. The data collected from interviews in the four case schools in 2010 will be applied in this analysis. The table below displays the preliminary results; it also summarizes the evolving process of the SAP from 2007 to 2010.

Year	Policy instrumentality	Agent	Object of the school improvement project	Contradiction/ problem
2007-2008	Requiring a school project for school development and providing school funding and a better reputation	school administrators	<ul style="list-style-type: none"> <li>Facility buying</li> <li>Student recruitment</li> </ul>	<ul style="list-style-type: none"> <li>Consumption of resources without commitment</li> </ul>
2008-2009	Shifting the school focus from expenditure to teaching and learning with auxiliary support including expertise consultation and school networks	<ul style="list-style-type: none"> <li>school administrators,</li> <li>innovative teachers</li> </ul>	<ul style="list-style-type: none"> <li>Trivial curriculum innovations</li> </ul>	<ul style="list-style-type: none"> <li>Work overloading, and Dispute over the division of labour at the schools</li> </ul>
2009-2010	Connecting school curriculum innovations and school strategy with auxiliary support including workshops for school development and a self-evaluation table	The majority of the teachers & staff	<ul style="list-style-type: none"> <li>Collective concept for school development: Providing a school based curriculum for diverse students</li> </ul>	<ul style="list-style-type: none"> <li>Gap between new curricula &amp; tools for evaluating school outcomes</li> </ul>

**Figure 5.** The evolving process of the School Actualization Program

### **5.2.1 2007–2008: Consumption of resources without commitment**

Since its very beginning, the SAP's interventionist scheme and schedule was simply copied from other educational policy programs in Taiwan. The basic idea was that a school could obtain funding by writing a proposal to apply for the program. This type of policy intervention in Taiwan usually includes the requirement of completing a school project and audit work such as an external evaluation of the school. However, audit work in policy intervention hardly enables the implementation of the policy idea at school because evaluators usually have divergent interpretations of the criteria. Therefore, their influence on teaching and learning is nebulous in general. The audit work is a black box in top-down policy implementation.

Nevertheless, participating in the SAP still had many benefits for a school. They received extra funding and bettered the reputation of the school. Participating schools are called a school in school actualization, which gives an auspicious name for recruiting students to the school. This sign carries the form of capital, thus making it lucrative for a school which is relatively poor in terms of school rankings. As for the financial funding, it certainly is a bonus for the schools' operations.

As a matter of fact, the object of school activity may not only relate to teaching and learning, but also connect to organizational survival and the sustainability of the career of the personnel. Accordingly the number of students, the student quality, and immediately visible buildings might be counted as being more important to school administrators. This object would be the case when the agent participating in the SAP in the school is only a school administrator.

According to the interviews, a scholarship at a SAP school is the most popular artefact that the schools employed, besides using funding to construct facilities. The scholarships made it easier to increase student numbers and to recruit students with high academic achievement. The scholarships provided the most economical way to create good school performance. Together with constructing facilities, using funding to recruit students shows that the school agent only consumed the resources without generating commitment to teaching and learning, which is supposed to be the core task of the school.

Consequently, the idea of the policy was unable to impact either school habits or inertia or improve school quality.

### **5.2.2 2008–2009: Work overloading and dispute over the division of labour at the schools**

Since July 2008, the form of cooperation in the hybrid group has changed. The new way of operating enabled school voices to be heard in the policy-making



activity. Therefore, the contradiction generated on the school site had a chance to be dealt with.

In the year 2008, the hybrid group revised the requirements for school plan applications. They placed a limitation on school expenditure items. They required schools to spend more expenditure on teaching and curriculum development. Scholarships were also limited.

To support the new requirements, the hybrid group also reinforced their consultation work and built a platform to exchange school experiences. With these two connected artefacts, the hybrid group was expecting to facilitate the schools, strategy planning for school development. The supporting expertise and the space for peer learning have become part of a complex policy instrument—policy instrumentality. This revised policy instrumentality in the SAP implied the new potential of mediation in the policy process.

The revised policy instrumentality reified the problem solving process. Concomitantly, more teacher in schools who might have been otherwise unable to participate without this policy process, help to develop the school curriculum and the local experiment.

However, the social expectations from parents together with the strict national curriculum framework forced most of the experimental curriculum to take place only after school and on weekends. The rules evolved from the traditional test-oriented school activity still dominated the teaching and learning on campus. Only a few teachers were willing to give test their new idea in schooling practice. The extra work soon became a burden, even for the most enthusiastic teachers. Disputes over the division of labour also spread quickly among the case school administrators because the requirements for supporting the work were increasing. These problems started to jeopardize the innovation on the school site.

### **5.2.3 2009–2010: Gap between new curricula and tools for evaluating school outcomes**

Two causes for these school problems were recognized by the hybrid group, through program evaluation, consultant feedback, and group discussion. The first cause was that the school employees did not all agree to engage in curriculum innovation. Secondly, the innovative activities inside the schools were trivial and not intended for school development. In reaction to these problems, the hybrid group added obtaining a consensus at the school and engaging in directed development efforts into the policy requirements, which meant that a collective commitment from the school is required for a SAP application.

Collective commitment is a challenging threshold for schools, especially for schools with many dozens of teachers. To solve this problem, the hybrid group designed workshops and a self-evaluation table for schools. The workshop is comprised of experience-based games, thinking training, and strategy making. In

the workshops, the participants were given the space to reflect on and discuss school problems and formulate tasks for school development.

As a result, the case schools developed collective concepts for school development with the supporting resources in policy instrumentality. The collective commitment and consensus to process innovations were built in the network inside the school and received recognition at the school's annual meeting. One characteristic of collective concepts for school developments shared among case schools was providing a curriculum for diverse students.

However, the collective concepts in school were not yet stable. On the one hand, stakeholders such as parents and students were still wondering what value could be added to this process beyond test results. On the other hand, the SAP was becoming more visible as a political issue after these years, which resulted in the SAP policy process becoming more complicated.

## **6 PLANNED ARTICLES**

### **6.1 Article 1 — From reflection to dialectics—Remaking tools for social experiments**

Several concepts have been developed to mediate solutions for public crises in the neo-liberalism era (e.g., Ranson, 2012). However, the process of concept formation in social experiment are not clear yet. By inquiring how the SAP hybrid group developed artefacts for school transformation and recognize problems of implementation in their meetings, the paper aims to understand the preparing phase of a social experiment. The audio-recordings of the hybrid group meetings and meeting minutes from 2008 to 2010 will be used as empirical data. The concept tertiary artefact raised by Wartofsky (1979), will be taken to analyse the SAP work representing in the data.

### **6.2 Article 2 — School transformation: From a test-oriented model to an experimental model?**

A contradiction is the source for collective transformation (Engeström, 1978). In order to understand how contradiction been recognized by collective, this article is planned to investigate how schools used SAP instruments in their practices, and what problems had been solved. Data for this article includes interviewing school administrators, teachers, students, and parents from four case schools participating in the SAP, and audio-recordings from school consultation sessions, also documents of school projects for the SAP application. The activity system developed by Engeström (1978) will be employed as the analytic unit to depict the change processes in the case schools. The paper also will use the concepts of artefact (Wartofsky, 1979) and remediation (Miettinen, 2013) as a starting point to study the relation between the instruments introduced by the policy and the tools and mindset developed in the schools. By tracing the trajectories of the tools developed by the schools respectively, the multi-voices from schools in the policy- mediating process can be examined, and the dialogic relation between the policy instrument and the local tools can be observed.

### **6.3 Article 3 — Evolving forms of cooperation in policy-making activity**

Specialists or expert groups are having an important role in public service (Perkin, 1989), even in the international organizations such as those in European Union. With the interest of understanding how an expert group becomes more important in public service, the article is asking – in the case of the SAP – what

contradiction emerged between the bureaucratic tradition and the new experimental methods, and how it impact the operation of the SAP hybrid group. Data for this inquiry are from interviews with three main project investigators and 21 other members working in the hybrid group for the SAP from 2006 to 2012, and policy documents about SAP implementation during this period. The paper will take the notion of text-reader conversation (Smith, 2001) to organize the data. The concept of recognition (Honneth, 2009) will be utilized for discussing the process of subjectification in a collective action in policy making for educational change.

#### **6.4 Article 4 — Instrumentality formation in a social experiment community**

Instrumentality is a notion used to grasp the toolkit used for experimentation in the approach of Cultural Historical Activity Theory. Apart from expressing this idea, the notion is not clear yet. Guided by the purpose of understanding what artefacts and how they coordinate to solve problem, the article aims to inquire how instrumentality developed in the case of SAP, and what kind of characteristics of instrumentality arose in the SAP policy process? Together with results of the former three planned articles, this paper will study historical data include documents expressing the ideas advocated in the SAP process, and interview leaders argued for them. The notions of ideality developed by Ilyenkov (1977) and instrumentality (Engeström, Puonti and Seppänen, 2003) will be taken as fundamental concepts for the analysis. By tracing objectified social representation in the historical data, the paper may contribute to the understanding of instrumentality.

## 7 DATA – INTERVIEWS, POLICY AND PROJECT DOCUMENTS, RECORDS OF MEETINGS

*Interview data* were collected from four sources: case schools, the SAP hybrid group, a retired deputy minister of education, and a leader of the educational reform movement in the 1990s.

Semi-structured interviews in the schools were conducted in 2010 and 2012. Four schools from Hualien County in the eastern part of Taiwan were chosen as the research site for collecting the interview data. These four schools have participated in SAP from 2007. They are coded as school 12, school 13, school 14, and school 15, respectively. Schools 12 and 13 are publicly funded senior high schools; the former school recruits male students, the second female students. School 14 and 15 are privately funded comprehensive schools<sup>3</sup> for both male and female students. Students registering in these schools are mainly aged between 16 and 19. Parents, students, teachers and school administrators are included in the list of interviewees. School administrators include school principals, office deans, and section chiefs. The interviews from 2010 have been transcribed in Chinese.

In addition, the study also did semi-structured interviews with the SAP hybrid group in 2013. The interviewees include the three main project investigators responsible for the SAP in 2006, 2007, and 2008-2013 respectively, and 21 other members working in the hybrid group for the SAP from 2006 to 2012. These members are professors from the universities, principals and teachers from senior high schools, and public servants from the Ministry of Education in the central government.

One retired deputy minister of education in the central government, and the main leader of the educational reform movement also have been interviewed in 2013 and 2014 respectively.

*Policy documents and case schools' project documents* were collected for this study as well. The title of the main policy document is 'Implementation Plan of the School Actualization Program'. The SAP implementation plan has been revised and approved by the Ministry of Education annually from 2007 to 2012. The targeted reader of the document is the school willing to apply to the SAP. This document states the background and purposes of the SAP, how to apply for the SAP, and what schools should be done while taking part in the SAP. The document also introduces a schedule, tables and formats to guide applicants.

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<sup>3</sup> A comprehensive school has a polytechnic department and a general department. Students registering in the school can choose the department according to their interests.

Apart from the policy documents, the schools' projects for the SAP from 2007 to 2010 will be collected from four case schools. The school projects list the school's basic information, the object for development of the school, strategy, a self-evaluation plan, and financial needs. This information is written down based on the requirements and templates provided in the policy documents.

Besides, *the records of the SAP hybrid group meetings* were collected, too. SAP hybrid group meetings are where decisions about SAP design and implementation were made. In order to develop tools, the meetings were held more intensively during 2008 and 2010 than in other periods. Meeting memos will be collected as well. This study also will use *the records of School consultation meetings*. School consultation meeting is one mechanism in the SAP. They mainly aim to help the school solve a problem. They also provide information for the auditing work of the SAP. The school consultations for the four case schools in 2010 have been completed.

In short, the data work can be summarized as the table below,

**Table 5.** Summary of data work

<b>Source</b>	<b>Status</b>	<b>Purpose</b>
<i>Interviews</i>		
School	Collection has been done, transcription is in progress.	Paper 1
SAP hybrid group	Collection has been done, transcription is in progress.	Paper 2
Administrators from the central government	Part of the collection has been done.	Paper 2
Leaders of the educational reform movement in the 1990s	Not yet collected	Paper 4
<i>Documents</i>		
Implementation plan of the school actualization program	Part of the collection has been done.	Paper 2 Paper 3
School project for the SAP	Part of the collection has been done.	Paper 1
Previous research and the ideas advocated in the 1990s movement for educational reform	Not yet collected	Paper 4
<i>Audio-recorded meetings</i>		
SAP hybrid group meetings	Collection has been done. Selection and transcription still needed	Paper 3
School consultation meetings	Collection has been done. Transcription still needed	Paper 1

## 8 SCHEDULE FOR THE RESEARCH WORK

Year	2013		2014												2015
Month	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1
1 <sup>st</sup> paper															
2 <sup>nd</sup> paper															
3 <sup>rd</sup> paper															
4 <sup>th</sup> paper															
Data collection															

- Data transcription/sorting
- Literature review
- Data coding
- Paper writing

**Table 6.** Schedule for the research work



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