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Exploring High-School Readiness for Change in Taiwan from a Lens of Policy Design

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Abstract

Since 2007, Taiwan's Ministry of Education has been using the School Actualization Program (SAP), a government-funded grant program, to promote systemic change at the high-school level. This study explores the relationship between the SAP's policy design and resulting implementation of tools during the school-improvement process. The aim of the program's tools was to promote, at the school level, the expected behavioral changes in targeted groups. Specifically, one of the expected behavioral outcomes of the SAP's policy design was the promotion of school readiness for change, which could help schools to develop their adaptability in the face of constantly changing circumstances. Six high schools were chosen for this multi-case study, in order to accommodate a diversity of school profiles and various lengths of engagement in a six- to ten-year improvement process. The data came mainly from interviews with school members. Relevant documents relating to school performance, program policy, and government regulations were also included in order to improve our understanding of the school improvement process. The research findings show that shared vision, collaborative capacity-building, and a proactive school climate were essential to the school improvement process, and to schools' adaptability to change.

Keywords: schools' readiness for change, policy design, policy tools.

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從政策設計視窗探究臺灣學校之變革準備度

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摘　要

教育部於 2007 年起以經費補助的高中優質化輔助方案促進高中階段的系統變革。本研究旨在探討該方案的政策設計和政策工具的相互開展如何影響學校改進的過程。方案的政策工具包含引發學校變革標的群體之預期行為改變，學校變革的準備度與政府期待學校提升組織調適力以回應持續改變的大環境之政策目標息息相關。本研究採取立意取樣，選擇六所參與學校高中優質化輔助方案 6 至 10 年不等經驗的高中進行多重個案分析；資料搜集方法主要為學校成員的訪談，輔以相關學校檔案、政策方案資料、政府相關規範等文件分析以理解學校的改進歷程。本研究發現以描述、分析、與詮釋政策設計所創發的政策工具與學校變革準備度之關係，跨個案研究讓我們看見學校建構共享願景、協作動能、與激勵改變的學校組織氛圍是學校改進與組織準備度發揮有效變革的要素。

關鍵詞：學校變革準備度、政策設計、政策工具

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Introduction

Taiwan's educational system has undergone a shift towards a more decentralized and participatory system since the 1990s. In the past, the system was optimized for sorting students into universities. However, as Taiwan entered the 21st century, the priority became the cultivation of future talent and transformation into a student-centered school system focused on lifelong learning. To fulfill these goals, the government extended the basic education requirement from nine to twelve years beginning in the fall of 2014. The reform policy required schools to restructure organizationally and demanded that teachers learn, collaborate, and innovate to teach less and to allow students to learn more. Organizational learning and the professional development of teachers, therefore, have become essential to implementing this sweeping systemic reform (Chen, Lee, Lin, & Chang, 2016).

To help with implementing the new goals of education, the Ministry of Education leveraged an existing government grant, the School Actualization Program (SAP). The SAP originally launched in 2007 to support schools, on a voluntary basis, in adhering to policy reform goals. In over 10 years, the SAP has provided resources and financial subsidies to 313 high schools, which equates to almost 90% of the high schools in Taiwan. The purpose of the SAP was to accelerate change and to improve overall educational quality through leadership practices, school-based management, professional development, and innovate pedagogical practices (Lin & Miettinen, 2019). After the 12-year basic education policy began in 2016, the SAP began assisting high schools in adapting to the reform policies in a more progressive manner.

To explore the trajectories of school improvement in this reform context, we used the following research questions:

1. How do schools empower themselves as change agents to be ready for change as a result of policy design?
2. What kinds of policy tools have schools developed and employed to facilitate readiness for change?

3. What kinds of activities and practices are primary factors of readiness for change within the school improvement process?

Literature Review

Policy Design and Policy Tools

Policy design is a formulation of policy that entails the systematic and deliberate endeavors of government to achieve anticipated policy outcomes. Policy design contains formulations of policy activities to align policy tools with policy objectives. It also involves the application of knowledge from problem-solving experience and reasoning. Its aim is to develop and adopt courses of action that are likely to succeed in attaining their desired goals within specific policy contexts (Howlett, 2014).

Policy design typically contains constellations of implementation options, so planners can optimize the choice of tools to ensure the effectiveness of the implementation. It requires knowledge of end-means interactions and analytical calculations of how such a choice of tools undermines or improves policy effectiveness, The bundles of policy tools thus act as context-responsive strategies and functioning measures for systematic problem solving. They can maximize the complementarities between measures and avoid potential conflicts within the change process (Howlett, 2015, 2018). In 2011, Taiwan's government established seven strategic targets with 29 measures as a policy formulation for implementing 12-year basic education. It can also be understood as a mix of tools to achieve the visions, principles, and objectives of its 12-year basic education reform policy that regularly implemented in 2014 (see Figure 1). The SAP was one of the strategic measures to prepare high schools to be ready for the change of 21st century education.

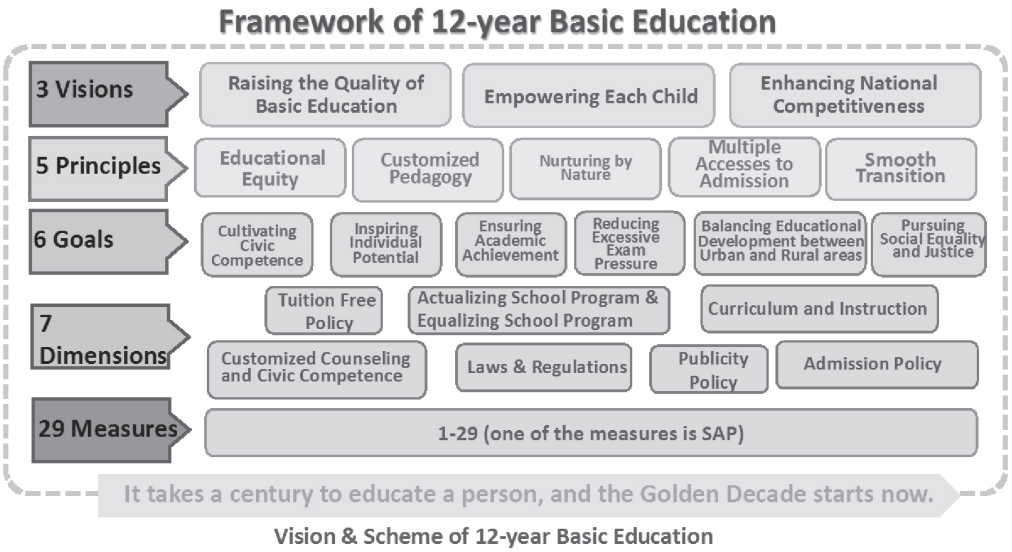


Figure 1. Vision and action plan of the 12-year basic education framework.
Source: Taiwan Ministry of Education. Retrieved from
https://www.edu.tw/News_Content.aspx?n=D33B55D537402BAA&s=37E2FF8B7ACFC28B

Policy tools are purposefully developed to effect behavioral changes in the targeted group through policy activities, procedures, and measures. These tools are often congruent with policy targets to ensure that the behavior of constituent members adheres to the wishes of the government. Generally, policy implementation entails the deployment of normative values, financial incentives, and the provision of material resources to induce compliance and buy-in efforts (Howlett, 2018).

Program Design for School Improvement

The SAP was set up to advance schools' readiness for change. Table 1 shows the program design and implementation tools to achieve the policy goals.

Table 1

SAP Design and Implementation Tools

Item	Program Design and Implementation Tools
Policy maker	Ministry of Education (Funding Organ)
SAP objectives	• Enhancing the improvement capacity of schools and the professional capability of teachers. • Helping schools to implement the new curriculum framework and to achieve the goals of the 12-year basic education policy. • Developing schools' professional expertise in meeting students' potential and cultivating their talents. • Ensuring every school is a great school for every child.
Primary tools	• Strategy-oriented and phase-differentiated improvement cycle through school improvement plans. • Annual plan and performance review. • Context-responsive advisory support. • Evidence-based questionnaire for school-based management.
Policy target group	• Remote areas and less competitive high schools (2007-2013). • All high schools (2013 onwards).
Resources (funding)	Approximately US$28 million in total in 2018 (8.5 billion NTD), averaging US$115 thousand per school (3.5 million NTD).
Implementation structure	• 2007-2015, SAP Taskforce Team (university professors, principals) + four leading schools + advisory expertise group (university professors, principals, administrative heads) • Since 2016, SAP Taskforce Team (six university professors) + five regional leading schools + advisory expertise group (university professors, principals, administrative heads)
Recruitment of expertise	Academics and practitioners involved in the SAP as approved by the Ministry of Education

Source: Ministry of Education (2007-2018). SAP and implementation reports.

The implementation of the SAP falls into three phases, with each phase lasting 3 years and each characterized by distinct developmental features for assisting in

the continuous improvement of the schools. Each phase consisted of improvement cycles that were strategically oriented and sensitive to changing conditions. The SAP Taskforce Team, which comprised university professors, principals, leading schools, and the advisory expertise group approved by the Ministry of Education, managed the implementation plans. Generally, all high schools in Taiwan were eligible to apply for the grants. However, because the SAP was a need-based program, schools in remote areas were more likely to receive grant subsidies. After 2010, the need-based program criteria underwent adjustment to accommodate performance-based review rules, as many more schools applied for funding.

The first phase of the SAP started in the 2007 academic year and focused on developing the fundamentals, in which the leading schools laid the foundation for school-based management and organizational learning. For the second phase of the SAP, which began in the 2010 academic year, the SAP Taskforce Team used focused innovation as its strategic target to encourage teachers to form teacher learning communities, use progressive instructional strategies, and develop unique curricula tailored to each school. Schools that completed the second-phase plan in 2010 could apply to participate in the third-phase plan, navigating school special development between the 2013 and 2016 academic years. In response to the start of the 12-year basic education in the 2014 academic year, the focus of the masterplan shifted from the development of distinct school features to the design of diverse elective courses and assisted instruction programs. Because of the numerous problems frontline teachers faced as a result of the change, the SAP Taskforce Team took the opportunity to transform the focus of the SAP directly into the development of competence-based or integrated curricula, and it employed systematic and strategic planning to lead schools in pedagogical innovation.

The goals and strategies of the SAP changed each year on a rolling basis to adapt to the new circumstances resulting from ongoing contextual policy changes. The policy mix was intended to optimize its effectiveness by choosing tools that aligned with policy goals to ensure that schools review their improvement plans on an ongoing basis in response to new circumstances (Lin & Miettinen, 2019).

Factors Relevant to School Improvement and Readiness for Change

The school effectiveness and improvement movement has been part of global and large-scale educational reform trends (Fullan, 2007; Sahlberg, 2016). As Swaffield and MacBeath (2005) described, schools that were ready for change showed their energy and capacity to change themselves, by themselves, and for themselves. According to school change studies, effective leadership, shared vision and values, de-privatization of teaching, mutual trust and peer collaboration, collective efficacy, structural support, and adequate provision of resources are significant factors in school improvement (Mitchell & Sackney, 2011). Similarly, Moustaka-Tsiolakki and Tsiakkiros (2013) pinpointed the factors of establishing shared vision, teacher collaboration, positive atmosphere, perceived problems of current status, and improvement of student learning outcomes as most critical to school success.

However, many of the change efforts failed and resistance prevailed in many change scenarios (Fullan, 2017). In addition, most organizational change models acknowledge the importance of the unfreezing step to achieve readiness for change. Hence, readiness for change is crucial to change efforts within which organizations may undergo phases of building momentum, unfreezing routines or activities, or gaining buy-in behaviors (Armenakis, Harris, & Mossholder, 1993; Choi & Ruona, 2011).

In the educational field, some literature focused on theories and measurement of organizational readiness for change (Weeks, Roberts, Chonko, & Jones, 2004). A few explored the influence of leadership behavior and organizational commitment on readiness for change in institutions (Agnew & VanBalkom, 2009; Nordin, 2012). Other research illuminated the relationship between school change efforts and organizational trust (Zayim & Kondakci, 2015). One case study depicted school continued improvement resulting from the interaction and dynamics between individual and organizational readiness for change in a Taiwanese high school (Chiu, 2020).

As Armenakis et al. (1993) stated, readiness denotes a “cognitive precursor to the behaviors of either resistance to, or support for, a change effort” (p. 682). This is a state

of being ready to take action including intentions, positive emotions, capability, efficacy, beliefs, commitment, primary support from leadership, and organizational climate—which could be enacted for cognitive and behavioral changes (Bandura, 1997; Holt, Feild, Armenakis, & Harris, 2007; Rafferty, Jimmieson, & Armenakis, 2013; Weiner, 2009). Readiness for change is a multidimensional construct influenced by the cognitive and perceptive beliefs of members of an organization. The critical elements of readiness for change include (a) organizational members are able to implement a proposed change (efficacy), (b) the change is appropriate for the organization, (c) the leaders are responsible for the change project (structural support), and (d) the proposed change benefits organizational members (valence) (Holt, Armenakis, Feild, & Harris, 2007). These studies on readiness for change mirrored the SAP's theory of action, and therefore helped to facilitate an understanding of both organizational readiness and school improvement in the SAP (Wang, Olivier, & Chen, forthcoming).

Based on the relevant literature regarding school improvement and organizational change, Wang, Olivier, and Chen (2018) suggested six components of organizational readiness for change, which may be more useful for connecting policy design and program implementation for school change.

1. Organizational efficacy: collective efficacy and enabling of the organizational members. Professional learning and capacity building are paramount.
2. Organizational valence: perceived benefits of the change, ensuring that the change will legitimately close the gap between the current state and end-state of schools, clarity of vision and strategic targets communicated with organizational members.
3. Organizational culture/climate: nurturing a positive culture that is open to change and emphasizes participation, collegiality, mutual trust, and shared behavioral norms, beliefs, and values.
4. Organizational commitment: the intent and commitment of organizational members to the change initiatives and feelings of shared collective responsibility.
5. Leadership and management support for change: change agents may influence how the organization reaches readiness for change.

6. Structural support in terms of tangible funding, resources, infrastructure, measures, and strategies for action.

These six factors were used to meaningfully undergird the analytical framework of the findings regarding schools' improvement efforts facilitated by the SAP tools.

Methodology

Six high schools were intentionally chosen for this research to accommodate a diversity of school profiles (Ritchie, Lewis, & Elam, 2013). The schools were located across Taiwan. Five were public schools and one was a private secondary school. Overall, these schools had participated in the SAP for anywhere from 6 to over 10 years. Table 2 gives background data on the six schools and Table 3 lists the participants by school. The data came mainly from interviews, which took place between September 2016 and March 2017. The 38 participants were school principals, administrative staff, teachers, and students. They shared their experiences regarding vision building, leadership, improvement strategies, curriculum development, student learning, and the effects of the SAP. This study also covered relevant documents relating to the annual plan and performance review of participant schools, program policy, and government regulations to enrich understanding of the school improvement process.

Table 2

Backgrounds of the Six Schools

Region	North	E, C, D
	Central	A, B
	South	F
Type	Public	A, C, D, E, F
	Private	B
Length of SAP Participation (Years)	6-7	C, D
	8-9	B, F
	10+	A, E,

Table 3

Research Participants for the Six Case Studies

Case School	Administration			Teachers		Students	Total
	Principal	Chiefs	Coordinators	Leading Teachers	General Teachers	Current	
A	1	3	2	0	5	1	12
B	1	2	1	1	0	1	6
C	1	0	2*	0	2*	1	6
D	1	1	0	1	1	0	4
E	1	1	1	1	2	0	6
F	1	1	2	0	0	0	4
Total	6	8	8	3	10	3	38

* one of the participants served as chief of academic affairs.

The research group discussed and analyzed the data using collective inquiry. The collaborative analysis of the data involved generating school change profiles, creating an analytical framework according to the literature review and field experiences, comparing and contrasting the different cases, and identifying elements of school improvement and critical factors regarding readiness for change. We generated three dimensions of readiness for change to interpret the improvement processes of the six case schools. This framework was used to disclose the partial relationship between distributed leadership and school improvement efforts in a previous paper (Yang, Chen, Hung, Chen, Hung, & Sun 2018). Nevertheless, much have not been illuminated due to the limitation bounded by the particular approach of dispersed leadership practice. In this research, the concepts of policy design, policy tools, and organizational readiness for change have been incorporated into school improvement strategies to elucidate the complexity and dynamic of policy implementation context and process. The analytical framework contains three constructs for analyzing school readiness for change: shared vision, collaborative capacity, and school climate. With support from leadership and management, shared vision and a common understanding were gradually shaped by organizational valence, consensus-building, and identifying common values. With structural support, collaborative capacity and organizational efficacy was enhanced by the willingness to

participate, collectively inquiry, and a commitment to improve instructional quality. By cultivating a positive school climate, schools shifted from stagnation to risk-taking, mutual trust, and support (see Figure 2).

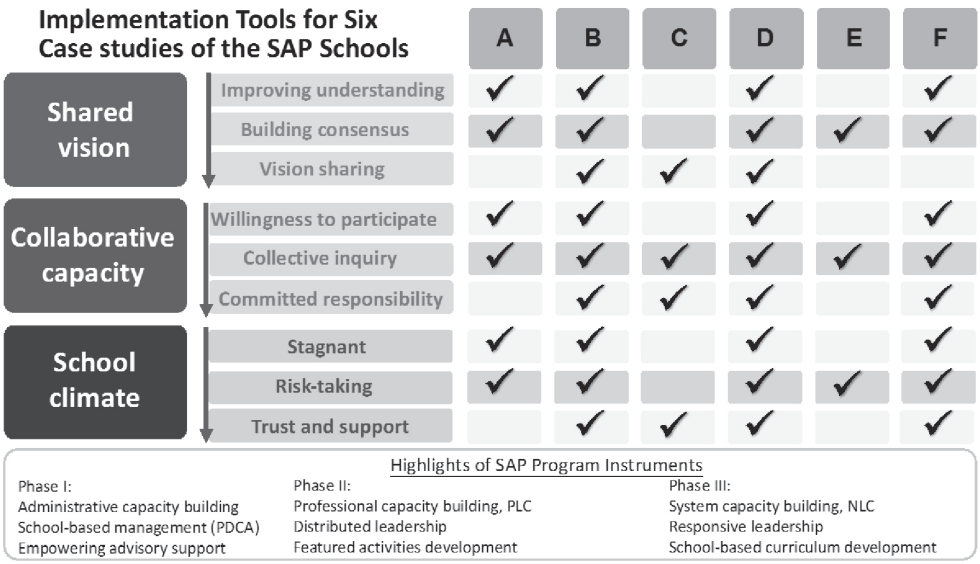


Figure 2. Analytical framework and change effort of each school by construct.

Source: Modified from Yang, Chen, Hung, Chen, Hung, & Sun (2018, p.33)

However, since the data collection mainly took place between 2007 and 2015, this research does not reflect the effects of the 12-year basic education framework and its curriculum guidelines, which began in 2014. This may limit our understanding of the interplay between policy design, program tools, and readiness for change with respect to the comprehensive reform of curriculum. In addition, due to the variety of school contexts and the massive amount of data we collected from the SAP implementation over 10 years, the interpretation of the findings might not cover all the important issues relating to school improvement or the details of the change process for each school profile. As a result, the research may not comparatively explain the complexity of school changes resulting from the interaction between SAP design and implementation

tools. Nevertheless, this limitation may nurture an aspiration for further studies int the sustainable impact of SAP practices and the endurance of readiness for changes in SAP schools.

Findings and Discussion

How do they empower themselves as change agents: Six SAP Case Schools

The six SAP schools joined during various phases of the program. The findings follow school background and characteristics. The ages of the schools ranged from 8 years to 72 years, and the number of students attending each school ranged from 1,000 to 2,500 (see Figure 3).

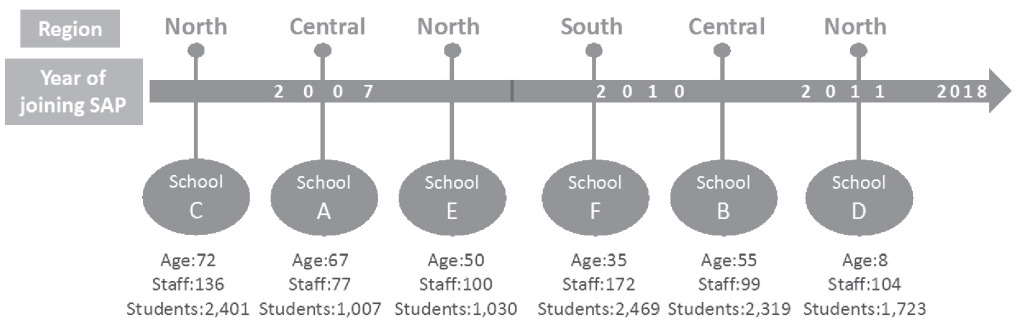


Figure 3. The six schools by region and year of joining SAP.

Located in a remote area, School A was deeply influenced by the local culture and welfare policies, which encouraged students to apply for college and jobs. Approximately 70% of the teachers were alumni, with many of the younger teachers having been taught by the veterans. This composition provided four generations of a steady workforce at the school, which was unusual among rural schools in Taiwan. School A was one of the first SAP participants to gain additional financial support from the government. The

leadership team from the beginning minimized its improvement efforts, merely focusing on upgrading school facilities and equipment. Supported by SAP tools with emphasis on school-based management and professional development for teachers, the current principal adopted a "walking around management" style to monitor classroom teaching and learning. The school atmosphere gradually shifted from isolation to cooperation, manifested through the collective effort to develop its new school-based curriculum.

School B is a private, 6-year secondary school in central Taiwan, and it has received SAP subsidies since 2010. It has demonstrated organizational momentum throughout the three SAP phases: upgrading school equipment and facilities and developing student activities; strengthening administrative effectiveness, encouraging teacher participation, and developing middle-level leadership; and increasing instructional and learning capacities and engaging teachers in curriculum development. The school made great efforts to develop interdisciplinary courses that aligned with holistic education principles, and it incorporated environmental and international education to create global understanding and local action.

School C had participated in the SAP from the beginning, but its participation ended in the second semester of the 2012 academic year, when it began receiving subsidies from the local government instead and became ineligible to receive the SAP grant from the national government. It then joined the SAP again in 2016 with a strong professional culture and a consolidated school vision. During the funding boost, supported by the local government, School C developed a new curriculum based on its vision of "diversity, excellence, and innovation." After several years of renovating school-based curriculum, School C had transformed itself from a conventional university entrance-oriented community high school to a school characterized by innovation and global connection.

Located in the north, School D is a young school. It joined the SAP during the second phase of the program with an emphasis on teacher professional development and empowerment. In 2015, School D began transforming its curriculum to align with the 12-year basic education goals. The school gradually adopted a more distributed leadership model with teacher leaders taking on critical administrative tasks relating to the curriculum reform. Some lead teachers used their coordination skills to carry out their

administrative duties and fulfill their teaching responsibilities concurrently, while setting direction for action. Collaboration on developing school programs and activities, as well as responding to students' learning needs, also strengthened the teachers' professional capacity.

School E is a 6-year secondary school in a remote northern area with students from economically disadvantaged families. Some teachers actively devoted themselves to developing hands-on learning activities to enhance students' problem-solving capabilities. The current principal made an effort to enlarge resources to support students' learning. Subsequently, School E obtained tangible supports from both SAP funding and the Pilot School subsidy from its local government. With both of these grants, the school upgraded its information technology infrastructure. In the third phase with an emphasis on curriculum development, the school boosted international education with a study abroad exchange program to enrich students' global understanding.

School F, in southern Taiwan, transformed into a 6-year secondary school in the 1990s, and it has received SAP subsidies since 2010. The current principal emphasized professional capacity and peer collaboration building, utilizing her previous experience on how to empower teachers. The leadership team supported organizational learning to promote teacher involvement and cooperation at School F. The distributed leadership practices and active participation of teachers led to a thriving teacher community within 3 years. As School F entered the second phase of SAP, the teachers were already prepared and confident to develop the curriculum and to innovate in teaching.

Program Design and School Implementation Tools

The SAP was designed to prepare high schools for change. The SAP tools were developed to support the continuous improvement of SAP schools through tangible resources such as financial subsidies and capacity building. School plans had to involve staff in writing up a strategic planning document. By creating school development plans and reporting on implementation results, schools engaged in an internal, cyclical learning process of "plan, do, check, and act," a common process in school-based management. The SAP Taskforce Team would provide further support and feedback

through implementation and performance reviews according to the Ministry of Education guidelines on whether the taskforce should use competitive or need-based review criteria that might change annually. Figure 4 summarizes this process.

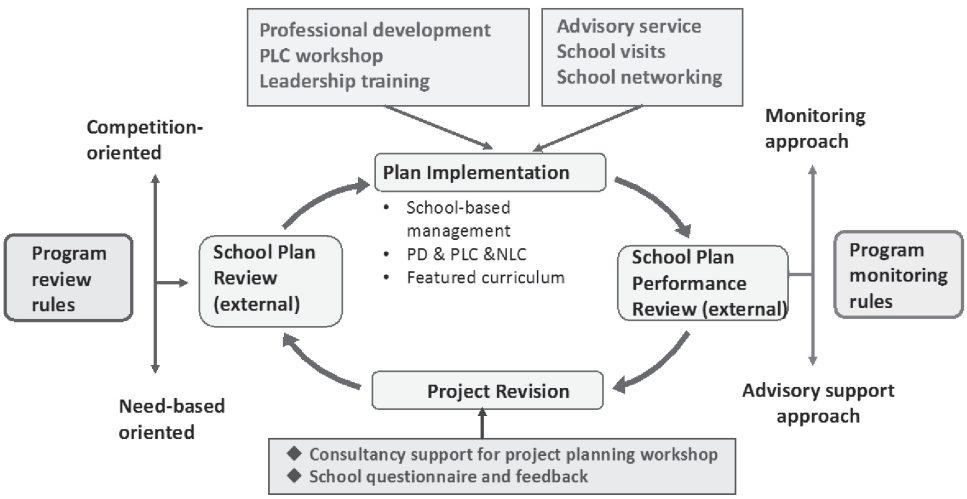


Figure 4. SAP design and tools.

During the implementation process, the taskforce developed program implementation tools to help schools to execute their plans. An advisory team of university professors, district administrators, and principals visited schools and provided feedback regarding the effectiveness of the implementation plan. School administration teams then instituted practices relating to data-driven decision-making and school-based management. With tangible support structures, the policy behind the SAP might lead schools to a state of change readiness. Organizational learning and a professional culture conducive to collective learning likely helped schools to develop organizational efficacy and commitment.

The SAP tools included school-based management practices, such as SWOT analysis, professional learning community (PLC) development and organizational learning workshops, and training on curriculum design. The team also conducted

surveys for schools to collect feedback and to reflect on their progress to improve their implementation plans. External performance reviews may also help schools to monitor their progress. These activities and implementation tools were intentionally designed to enhance the leadership and management practices of the schools.

School improvement efforts enhancing readiness for change

Generally, the design of the SAP and its tools provided a framework for schools to build capacity and organizational readiness for change. After analyzing and comparing the cases, we discovered that school readiness fell into three comprehensive constructs, with each construct having three levels (see Figure 2). Nevertheless, organizational change did not follow a linear progression, but underwent dynamic development in multiple directions, and the degree of change resulted from an accumulation of organizational efforts over time. Therefore, one of the aims of this study was to explore the various strategies SAP schools had taken to improve themselves continuously.

As mentioned above, the SAP was designed to address school improvement issues. It offered organizational strategies for unfreezing old practices and creating new activities that brought about changes. Hence, readiness for change includes multiple aspects of organizational behaviors and actions, including organizational efficacy, perceptions about the benefits and appropriateness of change, leadership and structural support for innovation and risk-taking, and collaborative culture (Holt, Armenakis, Field, & Harris, 2007; Wang et al., forthcoming). Figure 4 shows the varying levels of readiness for change in the six schools. Schools B, C, D, and F exhibited significant progress on all critical dimensions of organizational practices, while schools A and E displayed some improvements but had yet to achieve strong cultures for school change. The following is an analysis of the three constructs of change efforts with respect to the six case schools.

(A) Consolidating a shared vision. The creation of and consensus on a vision does not come overnight. When the six schools agreed to participate in this study, some of them had not yet established a shared vision. It took continuous efforts in facilitating understanding and establishing consensus to create consensus.

1. Improving mutual understanding. Each school relied on its administrative

team to initiate the school SAP plan, which meant that teachers may not have understood the content and purpose of the program. Administrative leadership was crucial in this situation. The principal of School B devoted a substantial amount of time to deliberating and observing prior to applying to SAP. She participated in many workshops and shared what she learned to persuade the staff to participate in the SAP plan. One teacher remembered: "The principal kept talking on and on [about the new information she learned from outside]."

Teachers also played a crucial role in facilitating understanding. An interviewee from School F stated that at first, she was unaware that she had been participating in the SAP and took it as a regular part of her subject group activities. She was then elected as the subject chairperson and took the opportunity to make changes. With professional development funding supported by the SAP, she visited other SAP schools, participated in professional workshops, and transferred the knowledge that she had acquired to help her colleagues understand the purpose of the SAP. Like Schools B and F, most of the leaders in the six schools employed deliberate communication to convince staff and teachers to buy into new ideas for school improvement and participation in the SAP. Organizational talks about change valence were therefore crucial for initiating school change by making SAP improvement planning meaningful to participants.

2. Building consensus. Although consensus typically involves many organizational members (Leithwood & Riehl, 2003; Sergiovanni, 2007), the principals in this study had critical roles in shaping consensus. For example, the principal of School A provoked a "sense of crisis" among his staff to raise expectations for students' learning. He actively encouraged teachers to broaden their horizons by paying attention to future trends. He also attempted to integrate the current vision and mission of the school, as well as the school-based curriculum, with the adventurous spirit of first-generation migrants from China three hundred years ago. He said:

> *In line with our school motto of "Taking a stand for our land, taking action for the world," I try to inspire our students to cherish their ancestors' spirit of opening to the world, which is the common asset [shared between past and present].*

The principal of School E became the school leader just when the 12-year basic education program began in 2014. Unlike past leaders, he led strategic planning sessions to help the staff to explore the school's core values and future direction. He also helped the teachers to develop a sense of purpose by transforming the lives of disadvantaged students by developing them with a sense of self efficacy through a diverse and rich set of elective courses.

Leadership support is critical to developing readiness for change at the initial stage to set the direction for school development via appropriate discourse of organizational valence. Leadership is also important in providing tangible resources and upholding organizational efficacy and commitment to sustain school improvement efforts, as the six case schools showed (Leithwood & Jantzi, 2006; Weiner, 2009).

3. Vision sharing. According to Figure 4, half the schools were close to achieving a shared vision, which meant the visions of these schools had a leading effect and that most school members accepted them.

Due to declining enrollment, School C faced significant pressure to improve its academic performance. However, rather than focusing merely on academic performance, the principal decided to establish a school vision through building consensus. He elaborated the school vision as follows: "We want our students to cultivate a global perspective … and with multiple competencies. We therefore endeavored to restructure the school curriculum … [and to] develop special elective courses by asking teachers to collaborate in teaching and lesson planning."

The principal of School C often reminded the teachers about the school vision, discussing the significance of the school vision in eight consecutive school administration meetings. After some months, the teachers agreed to shift the instructional practice from teaching to authentic learning, and in particular fostering students' autonomy and self-awareness. The vision and goals of the school were continually referenced during curriculum development and instructional design.

School D had established shared values about international education as the key to developing the school's specialty programs. The excellent learning outcomes of students in these specialty courses then became the flagship program that led to a subsequent

increase in enrollment. One teacher recalled:

> *There was no need to push anymore because the majority of teachers identified with the school goals. There were some teachers who sat on the fence or had doubts about the emphasis on international education between 2010 and 2012. Things changed after students outperformed in the foreign languages exams and the school's [improved] reputation resulted in an increased enrollment of high-achieving students.*

As a result, increasing numbers of teachers were gradually convinced to align with the school vision, and they put more effort into refining the flagship courses and creating a new curriculum. As the literature has shown (Rafferty et al., 2013), consensus building and shared vision affected constituents on a cognitive and affective level, which motivated them to change. In turn, teachers felt empowered to lead and collaborate for change.

(B) Developing the collaborative capacity of teachers. Teachers have become change agents for educational reform policy, and their efficacy within the organizational context directly affects instructional innovation and student learning outcomes (Bandura, 1997; Mitchell & Sackney, 2011; Timperley, 2008). The experience of the six case schools in the SAP demonstrated the importance of collaborative values, namely the willingness to participate, collective inquiry, and committed responsibility.

1. Willingness to participate. The attitudes of school members towards change are important to the success of educational interventions (Chow, 2013; Cockburn, 2005). School leadership played an especially critical role in developing the organizational valence of the staff. School A, for example, had a history of staying within its comfort zone. However, the principal aroused a collective sense of "a community at risk," and encouraged a future-looking perspective that led teachers out of their comfort zones. The principal arranged opportunities for teachers to attend workshops or take study tours to learn from schools in other cities. Teachers became aware of the school's current state and were willing to make changes, such as crossing subject boundaries and actively forming PLCs. Eventually, they developed an interdisciplinary program that embedded local culture and environmental awareness.

Similarly, the principal at School F helped the middle-level leadership to see the school role within a changing global context, and the staff and teachers who shared the same views began to establish teacher communities to make change. These teachers experimented with new pedagogy and curriculum design and shared their accomplishments with colleagues, who were then inspired to join in the project. The group of teacher leaders thus became a strong base for developing the organizational willingness and capacity to act.

In addition to middle leadership, adequate resources were also critical to prompting teachers to change their behaviors. In School D, the administration team consciously planned and guided teacher participation in curriculum development. It made sufficient use of the SAP budget by establishing such mechanisms as curriculum composition and review to ensure that the school possessed ample resources and support for curriculum development, which enabled the school's academic program to improve gradually.

2. Collective inquiry. Collective inquiry refers to the use of collaborative practices when teachers engage in developing curriculum or innovating instruction. It is manifested by collective efficacy at the outset (Chen & Wang, 2015). As Figure 4 indicated, all the schools had reached this level, in part due to a bottom-up approach, particularly in the second phase of the SAP, as the research displayed (Liu et al., 2019). When the efficacy of school members reached a certain level of readiness, change took place through practices such as PLCs and displays of pedagogical innovation.

For School E, which had participated in SAP for many years, teacher learning communities thrived through an increase in teacher cooperation and group energy. Teachers' professional capacity improved through team preparation, mutual observation, and discussions about teaching. Each subject department set up a PLC, and teachers who originally had no idea about PLCs became collegial through collective inquiry practices.

Teachers at School C were willing to accept new challenges because of peer support. The leading group oftentimes referred to its collective identity and how it inspired group members to take to change. Teachers also established PLCs to promote cooperation and attended one another's demonstration lessons to improve their own instruction. To manage the increased teaching load, the teachers tended to cooperate across subjects

and topics to reduce the content load on each teacher. The director of academic affairs explained:

> *The MAKER course was based upon multidisciplinary cooperation. For example, we used "the Little Prince" as a theme to integrate into the MAKER course. We then invited an Art teacher, an English teacher, and History and Geography teachers. We combined several subjects to enrich the learning of students.… All of these course designs were initiated and created by teacher groups. These involved teachers proactively [asking] for more professional development opportunities than the funding could afford to help themselves [to] become competent at curriculum development.*

Therefore, the assessment of organizational valence and enhancement of collective inquiry through collaborative practices was the key to accumulating organization efficacy.

3. Enduring collective responsibility and commitment to change. Like the learning motivation of students, the collaborative capacity of teachers requires both inspiration and commitment. Armenakis et al. (1999) stated that organizational commitment is an essential element of system readiness for change. Thus, effective implementation required collective action, so all teachers needed to be involved and the administrative team could not be exempt.

For example, teacher leadership in School B evolved due to a collaborative culture and a strong commitment to change. Senior teachers with broad perspectives and administrative experience were more willing to take the lead as subject chairpersons and to manage the change process. They provided group guidance, and junior teachers joined the discussion. Collaborative capacity was thus established and continued. The chief of academic affairs commented on the strong solidarity among colleagues, saying: "Our teachers are enthusiastic about their teaching jobs. They do not want to be left behind by other schools. For example, one former administrator, voluntarily, invited two staff to tackle improving reading literacy for students without any additional gain."

The principal of School F deliberately developed teachers' agency and commitment by connecting the change to the core values of education. She said: "We couldn't fulfil

our purposes unless we were able to generate positive energy in teachers to persistently adhere to school goals." As Conner (1992) described, commitment to change is "the glue that provides the vital bond between people and change goals" (p. 147).

(C) School climate. With the emergence of teacher leadership, school leadership no longer needed to center around the principal, which allowed the organizational climate to change. As distributed leadership posits, leadership density permeates every level of an effective organization (Sergiovanni, 2007). The six schools in this study primarily exhibited three forms of school climate: stagnant, risk-taking, and trusting and supporting.

1. Stagnant. In fast-changing policy contexts, stagnation is not necessarily a negative quality. Even schools in which teachers had achieved collaborative capacity might have conflicting viewpoints between stakeholders. One way to moderate incompatible standpoints was through constantly reevaluating and reflecting on the school development goals (Lingard, Hayes, Mills, & Christie, 2003). Thus, assessing the potential benefits of the SAP to schools was key to changing the status quo.

For example, since teachers in School A had believed that government grant programs and strategic planning were irrelevant to teaching, the administration team had to take care of the entire implementation. It then postponed the bottom-up teacher participation in curriculum development. Even entering the third phase of the SAP, School A had not successfully institutionalized teacher-led action in the school.

By contrast, School D experienced less difficulty in changing perceptions around collective responsibility. Initially, teachers could not reach consensus over whether the school should apply for the SAP. Some teachers questioned the need to change the focus of the school from special programs that they thought elevated the school's status. There was also fear that offering a diverse set of elective courses would consume resources necessary for the special programs.

However, perceptions changed after the school implemented some elective courses as the policy demanded. Some students performed well with university admissions and foreign language testing. The teachers saw the benefits that the change could bring about, and they altered their attitudes and behaviors to take risks and showed support for the

school improvement program.

2. Risk-taking. A dispersed form of leadership enables or even encourages brainstorming and experimentation as determined by the support of peer relations (Chen & Wang, 2015). Interviewees in School E stated that after the school began to participate in SAP, teachers generally became more open minded and needs based than before. Together, some of them developed hands-on learning activities with their students, incorporating local learning resources and employing active learning technology. In School B, teachers were inspired to introduce new elements to meet the diverse learning needs of students, so the teachers conducted student surveys and used the results in their curriculum planning.

However, risk-taking and innovation do not happen naturally in Taiwan schools given the dominance of test-based instruction. Nonconventional pedagogy had to be developed gradually in School F with strong support from reform policies. According to the director of academic affairs:

> *It was important to see the organizational atmosphere gradually and slowly change.… No matter if the group momentum was boosted from the bottom or from the top, the school culture of collective learning and collaboration took time to be transformed.… The change of school culture was really challenging. If we do not want to superficially improve our teaching, we have to be patient to deliberately adjust and genuinely innovate our curriculum.… We indeed witnessed the pedagogical change in our school after 6 years of consistent efforts. But if we check our action every year, we may not see any change [occurring] within a short span of time.*

3. Trust and support. For the collaborative capacity of teachers to result in committed responsibility, a trusting and supportive school climate is necessary (Tschannen-Moran, 2001). Emotions were easily roused during the improvement process due to conflicting interests relating to the restructuring of tasks or workload burden (Rafferty et al., 2013). Be it principal leadership, middle leadership or teacher leadership, the creation and maintenance of a school environment in which people trust and support one another is a challenging task.

Even though the members of School B had strong bonds and identified closely with the school, bitter feelings about endless reforms were prevalent among change agents. The Chief of Academic Affairs recalled:

> *If you could not manage the administrative logistics that easily overburdened teachers, the destructive emotions would quickly accumulate and might explode at any moment. Our leading team was thus keenly alert on the increasing level of negative emotions and tried to cool down the feelings of frustration right away. We tried our best to help teachers [to] keep their bonds through their shared values in hopes that they continue to collaborate and integrate the curriculum.*

One of the interviewees at School F mentioned that when he was elected as a department chairperson in 2000, he immediately received the following warning from a colleague: "Don't be fooled. You must work alone to produce all of the plan results." Instead of shying away, he earned collegial trust through his consistent hard work. The teachers in School F also demonstrated peer trust by inviting colleagues to observe their teaching. While encountering problems, these teachers were willing to solve instructional problems reciprocally. The Director of Academic Affairs commented:

> *No matter the group momentum was boosted from the bottom or from the top, the school culture of collective learning and collaboration took time to be shaped.… The change of school culture was really difficult. If we do want to improve instruction meaningfully, we have to be patient to slowly adjust and deeply restructure our curriculum.… We indeed witnessed the change from school after 6 years of consistent improvement efforts. But if we only check our teaching every year, we may not see any change [occurring] due to the short span of time.*

With adequate administrative support, peer pressure could turn into a positive energy for School C teachers to take initiatives. Team capacity usually formed from teachers who were aware of and willing to set high expectations for themselves. Adult learning oftentimes preceded improvement in student learning. Teachers who perceived inadequacies in their own professional capacity joined learning communities to develop

shared practices and to enhance their collective efficacy.

However, due to ceaseless demands from government policies, the leadership team had to employ SWOT analysis to evaluate the benefits of any new plans and to make prudent decisions about whether to accept or reject the call to participate in government grant projects. The leadership team would rather undertake long-term action plans to accumulate the positive results of change efforts. The Director of Academic Affairs explained:

> *It would be no use if we just accepted the requests from the top without any prior assessment ... because the teachers would not be happy if the government plans were short lived or stopped after one year of execution ... or another similar plan appeared and teachers had to tackle it.... We anticipated that their energy would have died out soon before the virtuous cycle of positive effects could be realized.*

With deliberate decision making by the leadership teams, the administration, teachers, and students developed positive relationships that gradually formed a tangible trusting and supportive school climate. Collegial trust and support from organizational structure and culture was key to sustaining individual and collective change efforts (Holt, Feild, Armenakis, & Harris, 2007).

The Relationships between SAP Tools and School Readiness for Change

The policy design and its tools were context sensitive and responsive to school improvement needs. Because the SAP continually adjusted its program on a rolling basis, the key points of development for each phase varied. SAP schools implemented and adopted the tools the SAP Taskforce Team provided. The corresponding alignment between SAP policy objectives and schools' goals for improvement were evident within the implementation process of school SAP plans.

As mentioned, the implementation of SAP fell into three phases. At the beginning, the government emphasized supporting disadvantaged schools to help high schools in remote or rural areas to retain students from nearby communities. However, community high schools had difficulty attracting parents and students because high schools were

evaluated according to university entrance exam results and university matriculation. Schools A, C, and E were among the first to apply for the SAP program. They all underwent a period in which the leadership teams solely executed the SAP plan and few teachers participated. The funding they obtained mostly went to purchasing equipment, offering study aids, and supporting student club activities, as the SAP school plans had showed.

During the second phase, organizational efficacy became the key to uplifting school capacity for change. Teachers were requested to form learning communities to apply for the SAP grant. These learning communities became subunits of the larger implementation team. As a result, school leadership practices expanded to encompass teachers and middle-level leadership. At this stage, some teachers began to develop communities organically within or across subjects for curriculum development or collaborative teaching. Teachers who were accustomed to working independently gradually became comfortable with joint practices. Schools B, D, and F, which joined the SAP in the second phase, began by developing teacher communities to design diverse elective courses and special course activities. Non-formal learning activities gradually transformed into regular courses. As each school's vision evolved, this engine of change generated organic connections and fostered the practice of collective inquiry.

The school visions were shaped and reconstructed on a rolling basis in response to internal and external demands for continuing school improvement. Among the six schools, Schools B, C, and D were similar in terms of their strong consensus in shared visions and common goals. Schools B, C, D, and F fostered collaborative capacity and teachers developed a sense of committed responsibility, which helped with confronting new challenges. Likewise, these four schools developed a culture of collaboration and trust, as well as social capital, that subsequently underpinned the development and innovation of new curricula and teaching. The administrative director of School F noted the agility of the SAP, which played a critical role in meeting schools' needs as they improved their pedagogical practices. He said:

> *From the beginning, most SAP activities in School F were fragmented. With the guidance of SAP, these activities were gradually aligned with one another to form a sequence of learning activities. Some of these activities were*

transformed into modules of curriculum that could be used for the long term.… Our project-based learning course, which was sponsored by SAP, was an example.

The policy tools of SAP's second phase generated greater organizational efficacy through primary support from leadership teams and the cultivation of a collaborative culture among teachers. The cognitive and behavioral changes of teachers brought about a stronger commitment to school improvement after they perceived and recognized organizational valence through a shared vision.

The third phase, which began in 2013, was a response to the comprehensive reform of 12-year basic education. The policy of the SAP shifted its focus to emphasizing school-based curriculum development. The collective efficacy PLCs nurtured and the joint planning of featured activities in the second phase provided a foundation for curriculum restructuring in the third phase. Curriculum restructuring included developing a school vision, school-based curriculum and instruction, and authentic assessment that represented a shift from test orientation to the cultivation of 21st-century competencies. The number of teachers who participated in the curriculum redesign gradually increased, and a trend of bottom-up teacher collaboration within or across subjects emerged. The readiness for change was evident in the leadership support, strong base of collaborative culture, collegial climate, collective efficacy, and organizational commitment.

Over the years, with guidance from SAP tools and soft accountability measures, the school leadership teams transformed educational values into operational goals and pedagogical strategies. Through learning together, teachers developed the capacity and gained the collective efficacy to improve teaching and student learning. The organizational climate accumulated social capital through the planning, implementation, and reflection associated with collaborative practices. As a result, implementation of the SAP led to a more expansive organizational capacity and the exercise of distributed leadership that cultivated schools as learning organizations. As a result, the six high schools manifested a readiness for change to some degree through various pathways, and with various effects on school improvement.

Conclusion

In conclusion, the main purpose of the SAP is to ensure that every school is a great school for every child and to develop schools' professional expertise in meeting students' potential and cultivating their talents. Policy tools sustained school improvement efforts through a strategic and phased improvement cycle, which included professional development and an annual review of school improvement plans. Workshops and context-responsive advisory support were also intentionally designed to help schools enhance school-based management, promote the development of PLCs, and restructure curriculum. The SAP improvement cycle to a certain degree affected schools' readiness for change.

Therefore, policy design and tools making are useful to solve system problems and to create desired changes. In the case of the SAP, the long-term effect of the policy design and its implementation made the case for establishing school readiness before the implementation of major education reform such as the Taiwan's 12-year basic education policy. Whether a school successfully implemented the policy depended on the degree to which it was ready for change. The SAP was one way of influencing school readiness for change. Based upon the research findings, we concluded that policy tools could have an effect on school readiness for change (see Table 4).

Table 4

The Relationship Between SAP Tools and Factors Relating to Readiness for Change

	Phase I: School-based management	Phase II: PLCs	Phase III: Curriculum restructuring
Shared vision: organizational valence; leadership & management support	√	√	√
Collaborative capacity: organizational efficacy; structural support		√	√
School climate: organizational trust climate; organizational commitment		√	√

Organizational readiness for change in the six case schools resulted from the implementation of the following policy tools: perceived SAP legitimacy, boosted collective efficacy, and consolidated organizational trust.

Perceived SAP Legitimacy Validated Change Appropriateness and Created Organizational Valence

In the first phase of the SAP, the emphasis was on developing the capacity of school leaders to achieve a shared vision through meaning-making. Moreover, the legitimacy of any policy implementation requires acceptance by school practitioners and their beliefs in the benefits of the new policy (organizational valence). School members shaped and reconstructed the shared vision galvanized by SAP activities, oftentimes school leaders with strategic mindsets. Principals and teachers could become important change agents. Administrative support for change initiatives was particularly crucial. After school members accepted the rationale for change, there was salient recognition of the legitimacy of the change. The perceived benefits of the change resulting from SAP then provided a strong reason for school members to address the gap between the current state and the desired end state of the schools. The shared vision then became an enabling engine to drive school members who were willing to participate and to act for change.

Collective Efficacy Enhanced Schools' Collaborative Capacity to Take Change Action

In the second phase of the SAP, new PLC tools were introduced and developed to cultivate the professional competence of teachers. In addition, structural support from the SAP increased organizational efficacy by providing adequate resources to promote teacher empowerment and pedagogical innovation. Through PLCs, teachers exercised dispersed leadership through professional networking and action learning, which encouraged collective inquiry and collaboration and resulted in both individual and collective efficacy. Organizational efficacy was thus vital to building a corps that could steer change and cope with challenges and difficulties. Such collective efficacy in turn furthered the development of dispersed leadership in schools, creating a positive

feedback loop to shape a collaborative culture for sustaining improvement efforts.

Organizational Trust Generated Strong Support and Organizational Commitment

School improvement efforts in the first two phases of the SAP laid the foundation for sustaining change and transforming curriculum design practices in the third phase. Schools with strong cultures of trust reflect the energy of a collective entity. A positive culture that fosters openness to change, collegiality, mutual trust, shared norms of behaviors, beliefs, and values is surely a foundation that supports organizational commitment to changes. Risk-taking and innovation more easily occur in such friendly and supportive environments. A trusting environment also allows for reciprocal learning through collective inquiry. Proactive, lateral networking then becomes a key resource for implementing bottom-up initiatives and consolidating collective responsibility for change.

In conclusion, the design of the self-actualization program policy, in conjunction with instrument devices as leverage points, helped to foster and sustain systemic change in schools. On the one hand, tangible support in terms of funding, information resources, infrastructure, accountability, and professional support formed a base for scaffolding reform action. On the other hand, intangible resources such as mindsets, efficacy, and trust building may work as catalysts for developing capacities that generate authentic change. Altogether, these supports help organizations to transition into a state of readiness led by transformative agents creating change for the long run.

What remains unexplained and merits further study is first, the concepts of school improvement and readiness for change and their correlation to school changes, which need further study and clarification. Second, how to assess the alignment between policy design and implementation tools in relation to organizational readiness for change needs further exploration. Finally, how to capture the complexity of the implementation process and the interaction between the policy choices and the application of tools most efficiently is crucial to anchoring the effectiveness of policy design.

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