



The Anxiety of Educational Reform and innovation: Bridging of Top-Down and Bottom-Up Strategies within Practice Educational Reform of Curriculum in Indonesia

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ABSTRACT

Reform and innovation are essential issues in the educational field. Education is dynamic, and changing depends on globalization demands. Furthermore, to counterbalance the changes, there are two strategies, namely Top-down and bottom-up approaches. Top-down and bottom-up have advantages and disadvantages to the reform and innovation of educational. For instance, the strength of top-down is the government have the power to make policy, do research about the national curriculum and implement that policy in the education area, especially at school. However, making policy, regulation, research, and apply government have many drawbacks such as time and costs without any significant result. On the other hand, the benefit of bottom-up is the innovation of education easily to find and grow up because they have involved directly in the change in school. Also, they understand what they need in education because the teachers and the principle have a secure connection with the students and indirectly evaluate the national curriculum which is appropriate or not. Nevertheless, the school community, as the representative of bottom-up, did not have the power to bring that innovation at the top level because there is no connecting purpose between government and school. In addition, the significant effect is the top-down, bottom-up has different points of view to look into education. Furthermore, to solve that problem, the approaches could be bond to both strategies such as the collaborative, negotiate, conceptual, and strategic clarification, school-based management and strong site councils. Based on several previous researchers, that approach is the best option for bridging the educational purpose between top-down and bottom-up.



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INTRODUCTION

Recently, in education, there is a popular idea that education is a sector not prone to innovation and change. In the previous time, many education policymakers complained about the 'conservatism' of the system and the 'confrontation to change'. It also has an effect on the professional field like teachers. Employers assume about schools not producing employable workers with the right sets of skills. On the other hand, the learning outcome of students is like industrial production, which students must obey the rule, has bell rung every hour, and very strict (Reigeluth & Duffy, 2014). In addition, many parents conflate educational excellence with pedagogical traditionalism. Those characteristics of school making the schools are not offsetting



technological advances, incapable of keeping up with the soaring skills demand of 21st-century economies and the many social changes contemporary globalized societies bring about.

Moreover, those education systems are much more complicated. The school needs innovation like other sectors to counterbalance with technology which growing faster (OECD, 2014). In the early 20th century, Dewey (1916) argue that the school was the most conservative institution in the United States and was being used to obstruct the correct attainment of the democratic ideal. Despite this, he stated that schools had the potential to become the most radical of all institutions and could be drivers of real change. The main goal of reformist education, in his view, was to turn the school into an instrument of social reform. In the beginning, public school were managed by white man, most of whom grew up in rural America, but in the late 19th century, and the educational program in these school seem to have been rudimentary and similar (Cohen, 2018). However, as public education grew in the 20th century, it differentiated to deal with more varied students and conceptions of educational need. Horace Mann argued in 1848 that public schools were “the balance wheel of the social machinery.” But, by the 1930s, in many high schools, there were no common outcomes of the sort that Horace Mann had in mind around which systems could cohere because there were fewer and fewer standard programs. As internal differentiation grew, so did the loose coupling that later scholars would notice.

Although knowledge should be the starting point for reform, education has a relatively weak knowledge base when compared with other service delivery organizations. Policymakers and practitioners are too often unaware of the research base that might support their actions and in many systems, there is no established way of incorporating new knowledge into institutional practices to improve professional practice and student learning outcomes. Education has relatively similar roles for actors within the system, few requirements to incorporate good practices for managing school organizations and classroom activities, and the initiation of new members into practice is rarely systematic, all of which contribute to conservatism in education (OECD, 2014). The tension between radicalism and conservatism thus runs through any discussion of innovation, governance, and reform.

There is a link between reform, governance, and innovation. Reform is about policies that set the ground rules and frameworks and help to establish priorities and conditions. Melchor (2008) suggests that reform is only one way of producing change; it implies a special approach to problem-solving. Sometimes changes in organizations are key parts of reform, but other reforms produce little or no change at all. Whereas change as transformation or alteration may be an intended or unintended phenomenon, reform is a structured and conscious process of producing change no matter its extent. Reforms can occur in political, economic, social and administrative domains and contain ideas about problems and solutions and are typically understood as initiatives driven from the top of a system or organization.

Furthermore, innovation can be defined as any kind of dynamic change that is intended to add value to the educational processes - this can apply to different levels, ranging from systemic to classroom innovation. Though the terms are often used interchangeably, it is important to define how innovation is distinct from reform and change. Most of the literature defines innovation as the implementation not only of new ideas, knowledge, and practices but also of improved ideas, knowledge, and practices (Kostoff, 2003; Mitchell, 2003). Innovation is thus different from reform or change, as the latter terms do not necessarily mean the application of something new, nor do they imply the application of improved ideas or knowledge (King and Anderson, 2002). In addition, Angela Engel (2013) said that innovator is “Educate students to shape the world” and reformers is “Educate to shape students to the world”. However, in practice, it is difficult to know whether something is an improvement over an existing situation. The following table provides a comparison of the three terms. According to Roscoe (1987), college students have high importance of the role of romantic relationships in their lives. Because of the educational opportunities, the students choose to live in long-distance separation



location with their close friend or romantic partner. However, many students have to “go away” to college outside their home country such as from Indonesia to Taiwan, the relationships may assume in many forms. According to Skinner (2005), research on the dating behaviors of college students has been distinguished into the non-long distance and long-distance relationship.

Table 1. Comparison of innovation, reform, and change

	Innovation	Reform	Change
Definition	Implementation of improved ideas, knowledge, and practices	The structured and conscious process of producing change	Transformation or alteration that may be an intended or unintended phenomenon
Key characteristics	Implies novelty and brings benefits	Produces change (though in some cases only a little or none)	Is historical, contextual and processual
Types	The process, product, marketing and organizational. Also: incremental, radical and systemic form	Radical, incremental or systemic	Differentiated by pace (continuous or episodic) and scope (convergent or radical)

(OECD-CERI, 2014)

Governance refers to organized decision-making relations in the service of aims and proper functioning. Last, innovation is the increasingly important renewal that takes place within these parameters, given the demanding, rapidly changing nature of learning systems (Fullan, 1994).

In term of educational reform and innovation, is not the only government have the power to implement in education but also teachers, students, superintendent, parents, community, headmaster, and the school also have the important role in educational reform (Temes, 1994). Furthermore, there are two kinds of strategy for educational reform (Fullan, 1994), which have the same purpose of getting a better education. Firstly, the top-down strategy and another is the bottom-up strategy.

RESEARCH METHOD

This study used qualitative research by following document analysis as a method (Gray, 2004). Document analysis is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic (Bowen, 2009). There are two primary documents which analyzed, such as the document of the top-down and bottom-up.

RESULT AND DISCUSSION

Reform as the Top-Down Strategy

The top-down strategy is the government or policymaker area, which have the power to make policy and implement that policy in the education area, especially at school. Regarding the government lateral that policymaker doing the best to make educational reform at school area. Indonesia government doing some research to find the obstacle of the teacher, and students in school, also all problems in bottom space. For example, they were doing research in curriculum implementation. They try to discover the weakness of curriculum like how the curriculum implement and impact on the students and the outcome of the curriculum is making students has capable with the demands of economic globalization, 21st-century skill. How the teacher is



delivering materials to the students, and so on. In Indonesia, the government has the innovation program 12-year compulsory education in 2016, aiming to provide equal access to education for all adolescents between 16 and 18 years of age. The program replaces the previous nine-year compulsory education launched in 1994 but is not yet fully implemented (United Nations Children’s Fund, 2020). Despite this, a significant number of children stop their education after completing primary school. One in 10 children who should be in classes at the junior secondary level is not enrolled. More positively, the gap in attendance in junior secondary school between rural and urban areas - which was 7 per cent five years ago - has been reduced to just 3 per cent. More girls than boys attend junior secondary school. Drop-out rates increase further towards senior secondary school; again, almost one in five children who complete the junior level does not continue into the final years of their education.

Furthermore, the important thing is the educational reform of the curriculum for elementary school, junior high school, and the senior high school has changed gradually. Indonesia changes the curriculum 11 times from 1947 until 2013. The curriculum 2013 is the curriculum reform of education which has primary purposes. The purposes have connected with 21st-century skill like critical thinking, problem-solving, and inquiry; hands-on rather than minds-on; students centre; and doing process to gain the concept.

Besides educational reform in the level of elementary school, junior high school, and senior high school, the government also has educational reform at the university level. In term of science education curriculum that the previous curriculum in university level is not clear, because the curriculum did not have the pattern of the curriculum from the government, so over five years the science education department is using the curriculum based on K-13. Finally, Indonesian has a new curriculum which develops and implement an entire university in Indonesia, the curriculum called *Kerangka Kualifikasi Nasional Indonesia* (KKNI) or Indonesia Qualification Framework (IQF). Moreover, in term of academic level, IQF has nine levels of qualification. Level 1 is equal to junior high school, level 2 is equal with senior high school, level 3 is equal with diploma 1, level 4 is equal with diploma 2, level 5 is equal with diploma 3, level 6 is equal with undergraduate, level 7 is equal with professional, level 8 is equal with master program, and level 9 is equal to doctoral program. Besides the academic level, the IQF also have the non-academic level. It is mean that people who have expertise in a particular field, they can get that level of IQF by some examination (without the school track) (Santoso, 2013).

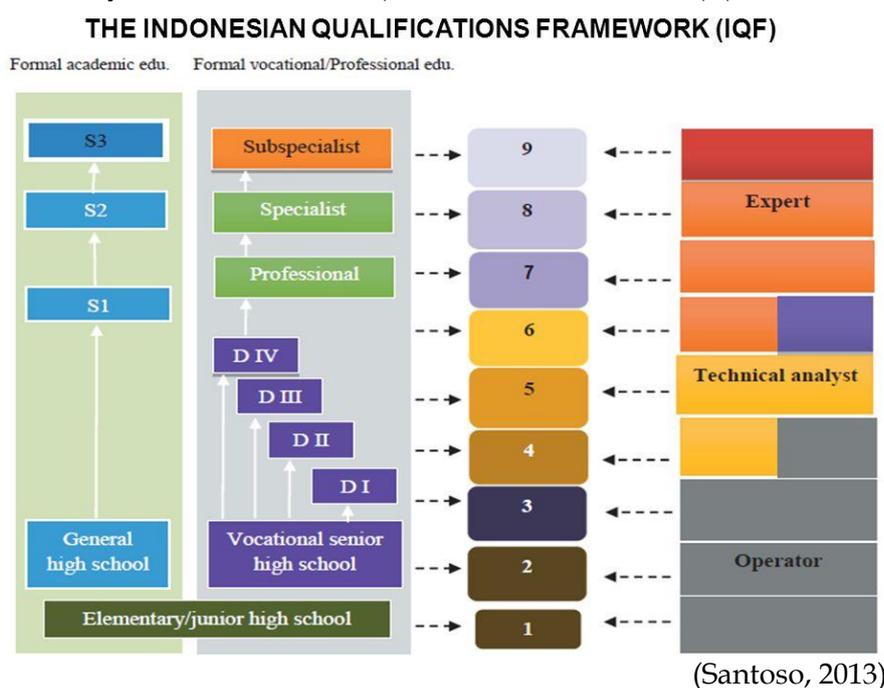


Figure 1. The Nine Level of IQF

Besides, advantages, the top-down strategies have some disadvantages, and complex problems and the main drawbacks are teachers, principle paradigm to look the educational changing from government and spend a higher cost for developing the policy of educational reform (Corbett and Wilson's, 1990). The people who are involved in below levels like teachers, principal, school, school committee, and maybe also parents have mindset deeply and believe that politic has the big influence in educational reform and can change everything which builds in education in the previous politician. They believe that if the political shift happens, like the new president and ministry of education automatically, the national curriculum also changing. In addition, the top-down has the shift of devolved decision that restructuring reform from government to classroom (Fullan, 1994). Furthermore, top-down, politically driven education reform movements are addressed primarily to restructuring, and they have little to say about educating. Moreover, the other unintended consequences, including the diversion of attention and energy from more basic reforms in the structure and practice of schools can reduced teacher motivation, morale, and collegial interaction necessary to bring about reform. They conclude: "when the modal response to statewide testing by professional educators is typified by practices that even the educators acknowledge are counterproductive to improving learning over the long term, then the issue is a 'policy-making problem'. (Fullan, 1994).

One a more sweeping scale, Sarason (1990) argues that billions of dollars have been spent on top-down reform with little to show for it. Sarason observes that such reform efforts do have an implicit theory of change. Change can happen when emerging new policy or new legislation, or something different compare previous policy.

Innovation as the bottom-up strategy

On the other hand, in some countries like the United States has policymaker in below area/district like Oakland and California. Policymaker in both districts used bottom-up reform involved the information management activities highlighted by organizational learning theory. Bottom-up is also a reform as a policy strategy for decades has faltered in implementation. The term of these, have various names in education policy implementation literature, including site-based management, school restructuring, school-community partnerships, or more broadly, bottom-up reform. Bottom-up innovation, as a distinct class of policy approaches, aims to flip traditional roles for policymakers and implementers on their heads (Honic, 2004). Furthermore, school teachers, school administrators, educational policymakers, parents, and social citizens is a part of the community (Temes, 1994). They are the community which doing some innovation because they are contacting with the school environment.

They have involved directly change in school, also understand what they need in education because teachers, the principle has strong connecting with the student and indirectly evaluate the national curriculum is appropriate or not, for example, in the science education department. Surabaya State University has innovation by restructuration curriculum every five years. Why the department must do restructuration? Because the curriculum is a planned educational experience (Thomas et al., 2016). The notion of "curriculum" has been interpreted in so many diverse ways that it is not easy to distil one unifying definition. The word "curriculum" can have two meanings. It can be used to describe a set of courses from which students can choose what subject matter to study, or it can collectively describe the teaching, learning, and assessment practices and materials available for a specific course or program. Thus, according to the second definition, a curriculum is more than just a syllabus of content topics it consists of a number of interrelated components and influences, which are essential to consider when designing a curriculum (Anderson & Rogan, 2010).

Based on IQF, the department (science education department) did restructuration curriculum which takes a look the previous curriculum and adding several resources such as from Ministry of National Education's Decree Number 232 / U / 2000 and number 045 / U / 2002 on Higher Education Core Curriculum, the concept of K-13, American Association for the



Advancement of Science (AAAS), and also from National Sciences Education Standards (NSES). Additionally, the research was the development research type, following the steps define, design, develop, and disseminate (4D models) (Thiagarajan et al., 1974) and CIPP models (Input, Process, and Product).

According to the IQF research for educational innovation, the department has two results, first curriculum evaluation results and secondly, results of curriculum development. Curriculum evaluation results have five outcomes such as 1). there is the incompatibility between on-going curriculum with the Learning Outcome (LO) that is contained in IQF, SNPT, Master of Professional Competence, Curriculum 2013, and NSES; 2). The on-going curriculum was not entirely fit with the process and assessment standards contained in the IQF and SNPT document; 3). The subjects-courses listed in the curriculum structure has not fully supported the achievement of the Learning Outcome (LO); 4). Description of the course has not been fully described the achievement of the Learning Outcome (LO). The descriptions need to be fixed in accordance with the dimensions of competence on the LO to be developed on the subject, e.g., problem-solving, use of science and technology, decision-making, and a variety of soft-skills; and 5). Graduates felt less/insufficient competence, in the aspect of knowledge, skills, and attitudes in the real work, included competencies required of teachers/educators in the form of pedagogical, professional, personal, and social competences. They said that the curriculum should rebuild/developed.

According to the stakeholders, the on-going curriculum in general needs to be improved. It is shown: (1) acquisition of knowledge competence (mastery of the concepts and principles of learning) and skills (design, implement, and evaluate) owned graduates still inadequate; (2) insufficiency to apply the concepts and theory subjects on learning; (3) the mastery of English language skills, especially in listening and speaking ability is still inadequate.

On the other hand, the results of curriculum development consist of 1) formulation of the vision, mission, and goals of Undergraduate Science Education Programs; 2) Formulation SKL/LO of Undergraduate Science Education; 3) Formulation of matrix competency versus core subject to determine subjects/courses; 5) Formulation of credits; 6) Formulation of Curriculum Structure; 7) Formulation of subjects/course identity, and 7) Semester Lesson Plan (RPS).

Additionally, the department also invited three experts in science education. Results of the review of the draft curriculum were in generally the draft is a good in quality and in accordance with IQF, but need some improvements. Suggested improvements include 1) Suggestions for improvement to the mission statement and objectives Science Education Programs; 2) Suggestions for formulating the subject; 3) Suggestions for improvement in curriculum structure: to add some subjects, i.e. Analysis of Science in Secondary School as well as some optional subjects; and 4) Advice on the identity of subjects.

In contrast, based on the research from Berman and McLaughlin (1977), the policymaker in school level often took on change projects for 'opportunistic' rather than for substantial reasons. They have three points that the local policymaker is not really focused on educational innovation from bottom to up. First point, local school official is more tend to project from the government than the possibility of change in educational practice motivates project adaptation. Secondly, the adoption of a change agent project primarily as an opportunity to garner extra, short-term resources, the lastly is a change agent project may function to mollify political pressures from groups in the community to "do something" about their special interests. The author believes that the top-down and bottom-up strategy has the important role in term of educational reform and innovation, but there is a lack and never find the connection between top-down and bottom-up strategies and effect to educational. The top-down strategy has the power to implement educational reform to school but sometimes did not match with the reality in school. Meanwhile, bottom-up have experience in bottom level because it directs connecting with the fact. However, it did not have enough power to distribute their innovation to government.



Bridging of the Top-Down and Bottom-Up Strategies

The connecting between top-down and bottom-up strategies can be seen in figure 2.

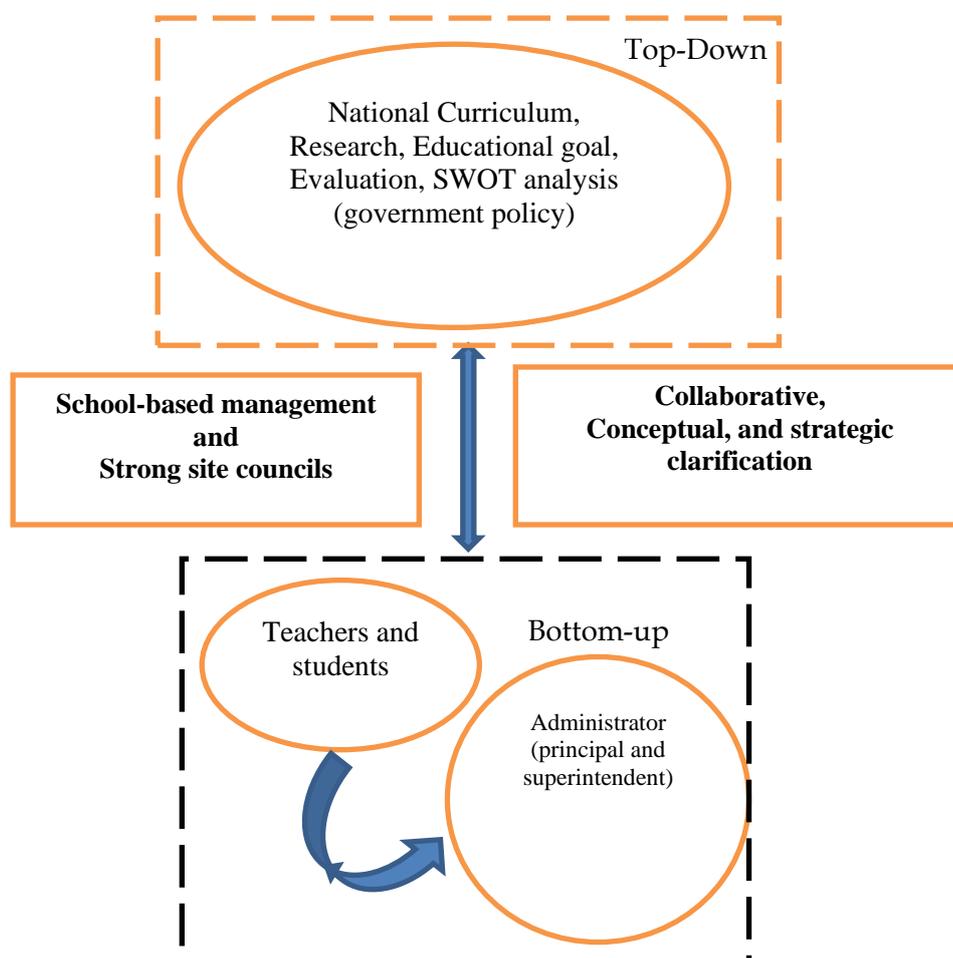


Figure 2. The connection between top-down and bottom-up

Based on picture 2 above, the foundation of education innovation. In the level of the school, teachers are directly touching with students who have brought to school every day, such as questions, the ideas, the challenges, and various feeling, which influence students. The students also thinking outside of the curriculum. Furthermore, the teacher has the critical way, creativity, and capability to look clear enough that teaching and learning are related or not with a subject, students' background and unexpected condition in the learning process by changing the methods/approach in class. Due to innovation or reform, the teacher often to take a risk when they must decide to follow the classroom rather than the principal.

Furthermore, the school administrator such as principle, superintended, curriculum director, and the many other central offices professional. I think that if the school administrator has the same idea to advance education better, they can give support and help the teacher, which become teachers' advocates. The school administrator is collaborated with the teacher to handle issues in classroom/education. For instance, the principle is working in partnership with the teacher in several activities, such as encourage a teacher to understand all of the obligations in education, acquires set of curriculum, enforce students have created to do great things with those confines. Furthermore, to make sure that every teacher has much freedom and professionally responsible.

The teachers are the product of the university, especially education university. Every education university has different learning outcome, but as Education University, the first learning outcome is the result of being a good teacher. Becoming the good teachers, the university must have a program to earn that purpose such as by excellent curriculum, proper evaluation, and decent activity as a part of the training. Some activities are from a curriculum, which reflective by courses such as use problem-based learning (John Dewey), teacher practice teaching, and how many credits must student passed, what kind teacher training that offers by the university, also evaluated before and after study in college. There is around three education university have different program to produce good teacher which the teacher become “teacher in change” by their ideas, innovative thinking, etc. The ideas, innovative/reform can change the education system in school better. In other hands, the government has the power to arrange education policy (top-down) and offer the policy to school by several things like curriculum which some content and context are irrelevant to school condition. The government, as the representative of top-down and the school community as the representative of bottom-up have a strong collaboration to organize the educational reform by booth sideways. Another approach is to use the philosophy of school-based management, and strong site councils continued to be heartily espoused by the superintendent and board, project management, professional development (Fullan, 1994; Cummings et al. 2005). In addition, collaborating has helpful to connect between top-down and bottom-up strategies because it can be engagement towards government and school community (Dufour R. 2007), collaboration and negotiated in the middle of top-down and bottom-up (Cummings et al. 2005). In other hands, the adjustment of bottom-up and top-down processes requires the personal involvement of policymaker and government, also the creation of communication arenas, networks and mediating tools (Saari, E., Lehtonen, M.H., Toivonen, M., 2015).

Furthermore, the government and school community realize and aware that the purposes of reform and innovation are seeking the best strategies for better education and embrace all people who involved in education policy. For example, the government invited school community like teachers and principle to sit together, plan, develop, and implement the new educational reform, also involve, and believe that teachers or principles within the implementation of educational reform at the school level, because of their more experience and deep understanding of the problem in school/district. On other hands, the school community invites the government to discuss and listen from the bottom what is the barrier to new education reform implementation at the school level.

CONCLUSION

Recently, reform and innovation are essential issues in the educational field. Education is dynamic and changing depends on globalization and advance in technology. The 21st century is needed to face the constant changes. The countries have reform and innovation of education to expression the changes. There are two strategies to make education change to a better future. Firstly, the top-down reform which government or policymaker has authority to handle the reform. Also has the power to plan, establish and enact a law on education in a country. Secondly, the bottom-up strategy. The educational innovation comes from the lowest level in the education system, such as teachers, students, principal. Top-down and bottom-up strategies has benefits and drawbacks to achieving the changes in education. For example, the beneficial top-down is policymaker has the power to research; analysis of education to develop and implement the new national curriculum easily in the school environment but the drawback is the government spend billion dollars to realize reform in below level with small result. In another hand bottom-up also have a positive side like their have directly to innovation in the real situation because they through interaction with students and often meet with unexpected things, but the disadvantage is bottom-up did not supremacy to change the whole educational reform, so the innovation from the bottom is like “broke up in the middle of the education



pathway". Some research tries seeking the best way by making the bridge between top-down and bottom-up and hopefully become the best approach to accommodate the purpose of both strategies. The collaborative, conceptual, and strategic clarification is one of the best ways to elaborate the top-down and bottom-up. School-based management and strong site councils also a good approach to bond the top down and bottom-up in the education field.

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