

Advance School Leadership, Progress Teaching Approach and Boost Learning: The Case of Indonesia

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Abstract

The 2013 Curriculum Reform and its effect on school practices remain a challenge for Indonesia since the roles of school leadership remain unaddressed. This study aimed to examine the effect of school leadership on instructional practices and student learning. This cross-sectional survey collected data from 1,082 students and 180 teachers from randomly selected 40 junior secondary school principals. Employing education production function models, this study found that the quality of school leadership had impacts on teachers' ability to create student-centered instruction and consequently on student learning. Results suggest that school reforms would be even more successful, among other things, through establishing school principals as professional agents of change that help teachers transform their instructional behavior and improve learning.

Keywords: school principals, leadership, student centered instruction

Background

One of the nation-wide school reforms in Indonesia was to introduce the New School Curriculum in 2013, addressing almost all parts of school programs. This is a centrally designed curriculum to be implemented in all schools throughout the country. However, the very need for school leadership approaches to help teachers implement the reform has remained unaddressed since then. It has generated

confusion in both school principals and teachers concerning the implementation of the intended reforms.

The Government has established teacher in-service training programs, preparing teachers to implement the reforms in pilot schools throughout the country. After three years of implementation, however, not much change has taken place in school practices as expected (Suryadi et al., 2014). Although teachers were technically trained, implementation of school reforms has faced obstacles that existed beyond technical matters. In this study it was assumed that improving school leadership practices is a big challenge for successful reforms. It aimed to demonstrate the extent to which school leadership practices affect better instructional practices. This study was to answer the question of what school leadership approaches and capabilities enable teachers to promote more effective teaching; if so, which types of instructional approaches greatly impact student learning?

Methodology

This was a cross-sectional survey on junior secondary schools, using highly structured questionnaires. This adopted a mathematical literacy test to measure the quality of student learning as an independent variable indicating the successful school reforms. Mathematical literacy is defined by Thompson et al. (2013) as: "... an individual's capacity to identify and understand the role that mathematics plays in the world, to make well-founded judgments and to use and engage with mathematics in ways that meet the needs of that individual's life as a constructive, concerned and reflective citizen." Using the designed questionnaires, the study collected data from students, teachers and school principals. The sampling technique was at three levels of random selection of: eight districts, five schools within the selected district, and one intake class chosen from the selected schools. All the students in the selected intake class were the primary sampling units. Thus, the sample size consisted of 1,082 students, 183 teachers, and 40 principals. Four provinces were selected by chance, i.e., West Sumatera, East Java, South Sulawesi and North Maluku.

The model of analysis assumed that the direct effect of the teacher's competence on student learning was very small and indirect. Instead, the teachers' competence would contribute a strong direct effect on their quality of instruction. The instructional quality by itself affects powerfully student learning, though it was a socio-economic variable of which the covariance effect was even stronger (Fuller, 1986; Suryadi, 1992; Heyneman, 2011). The quality of instruction is affected by

a diverse set of teacher and non-teacher variables, such as the teacher's competence, school leadership variables, and teacher characteristics (Fuller, 1978; Heyneman, 1982). The school leadership and teacher characteristics were naturally independent and conceptually unrelated though in fact they had important effects on the quality of instruction. This analysis also assumed that teachers' learning capacity, by way of measuring their education and training experiences, would significantly affect their competences and instructional performance (Budimansyah and Ace Suryadi, 2010).

Conceptual Review

Effective leadership is critical to school reforms. It is argued that "the chance of any reform improving student learning is remote unless district and school leaders agree with its purposes and appreciate what is required to make it work. Leaders in a district play extremely important roles in helping school leaders realize how the centrally-induced reforms are manifested into local development efforts" (Leithwood and Riehl, 2004). School leaders must provide teachers with support to practice the newly introduced reforms in their schools. Robinson (2010) states that "the total (direct and indirect) effects of leadership on student learning account for about a quarter of total school effects." Various findings vary widely with respect to the roles of leadership in learning improvement as Robinson (2010) further suggests that "...empirical evidence available in this case is not fully consistent is not something rare in educational research."

Among these inconsistencies, however, most of the studies have proven the powerful effect of school leadership. Day et al. (2000) concludes that "research findings from diverse countries and different school contexts have revealed the powerful impact of leadership processes related to school effectiveness." Southworth (2002) also suggests that "for the successful accomplishment of curriculum reforms, learning-centered leadership is the only way forward." Leithwood & Riehl (2004), too, suggest that "...effects of successful leadership are considerably greater in schools that are in more difficult circumstances... many other factors may contribute to such turn around, but leadership is the catalyst."

The relationship between leadership and school effectiveness depends on what leadership behaviors are to perform. There are two types of leadership behaviors, namely indirect instructional leadership, which aims to optimize learning through an effective principal managing the environment, and direct instructional leadership, which is to provide teachers with guidance and support to improve the

quality of instruction and achievement of all students (Bendikson, et al., 2012). These two have different impacts on teaching behavior as well as on student learning. Bendikson et al. (2012) find that "...in secondary schools, principals are more likely to focus on indirect instructional leadership than they are in primary schools, because middle leaders, such as heads of departments, take on much of the direct instructional leadership". Regardless of school levels, they further state, "principals in schools that were improving in performance were displaying more frequent direct leadership behaviors than principals from the other schools." This shows that the direct-instructional leadership affects school progress in a stronger way than does the indirect counterpart.

In literature, the quality of instruction ranges from conventional to student centered approaches. Conventional learning considers students as passive recipients of information without having to consider their needs to actively participate in learning processes (Attard, et al., 2010). Within this approach, the pedagogical method used is traditionally one of lecturing, note-taking, and memorizing information for later recognition or reproduction (MacLellan & Soden 2004). Many studies reveal that the traditional approach has caused the most fundamental problem notably in students less motivated to learn. Clearly, it is such a non-participatory teaching approach in which students are rarely invited to ask questions or apply critical inquiry to learning (Attard et al., 2010). The OECD's PISA (2001) shows that "...in 20 out of 28 countries more than one in four 15-year-old students considered school a place where they did not want to go and in almost half the countries the majority of students also agreed or strongly agreed that school was a place in which they felt bored."

At the other end, the quality of instruction is participatory or student centered in nature. It is mentioned that the main focus of this approach is on changes of pedagogical methods that make learning processes more enjoyable and enable students to participate fully (Attard et al., 2010). Student-centered learning, as the term suggests, is a method of teaching or learning that puts the learner at the centre (MacHemer & Crawford, 2011). This approach of teaching has a clear state of the arts as long as the theoretical perspective is concerned. From a constructivist perspective, "...knowledge is not passively received from the world, from others, or from authoritative sources. Rather, all knowledge is created as individuals (and groups) adapt to and make sense of their experiential worlds" (MacLellan & Soden, 2004). For the sake of successful school reforms, in this study it was assumed that student centered instruction was on the way forward.

Results and Discussion

The production function model using a linear multiple regression model yielded some interesting findings. The first model examined the effect of teacher characteristics and school leadership variables on teacher competence, as shown in Table 1. The magnitude of *R-Square* shows that this explained almost 79% of variance of teacher competence. The largest effect was given by four variables measuring teacher development efforts by way of pre-service, in- service, and on-service teacher training. These include favorable school climate ($\beta=.922$, $p=.001$); training attendance on curriculum, training attendance on classroom action research ($\beta=.438$, $p=.001$); frequency of the principal's supervision ($\beta=.762$, $p=.001$); and the teacher's education background ($\beta=.839$, $p=.000$). These teacher development variables affected in a positive direction.

Clearly, the effect of first teacher education negatively affected teacher competence as signified by negative beta weight ($\beta=-.393$, $p=.001$). This showed that the higher their education before appointed as teachers, the lower their average pedagogical competence test score. This is reasonable because by the time they first graduated, no pedagogical standards were required by the certification system that started later in 2005.

Table 1. Effects of teacher characteristics and school leadership on teacher competence ($R^2 = 78.7\%$)

No.	Predictors	Beta Weight (β)	t	sig.
	(Constant)		22.871	.000
1.	Training attendance on Curriculum	.163	5.566	.000
2.	Teacher Certification	.132	3.195	.001
3.	Age of Teacher	.064	1.622	.105
4.	The teacher's Latest Education	.839	21.378	.000
5.	Frequency of Head teacher Supervision	.762	21.605	.000
6.	Conducive School Management	.922	17.915	.000
7.	Teaching Experience of Teachers	.886	24.613	.000
8.	Training attendance on Subject Content	-.154	-4.552	.000
9.	Training attendance on Classroom Action Research	.438	13.865	.000
10.	The Teacher's Early Education	-.393	-17.242	.000
11.	Punishment Strategy for Less Performing Teacher	-.727	-16.695	.000

No.	Predictors	Beta Weight (β)	t	sig.
12.	Incentive Strategy for outperforming Teacher	.478	7.264	.000
13.	Status of TEI (1. Public, 2.Private)	-.293	6.340	.000
14.	Number of Teaching Hours per Week	-.096	-2.743	.006

The strongest effect variable in student learning was teacher development processes through school leadership in creating a favorable environment for the teachers to learn. In fact, this variable affected student learning in a stronger way than did their educational background. Profession is such a living and constantly changing concept that it needs continually updated competences. There were five teacher variables that affected the teacher competence significantly, such as training on curriculum implementation ($\beta=.163$, $p=.001$); training on action research ($\beta=.438$, $p=.001$); teaching experiences ($\beta=.886$, $p=.001$); and the teachers' age to indicate their accumulated results of life-long learning.

However, teacher in-service training on subject content had a negative effect ($\beta=-.154$, $p=.001$), which suggests that training on subject content was not sufficient because it was too short a period. Teachers' mastery of subject content was a function of their relevant pre-service program followed by continuing self-learning activities. Therefore, the most important role of leadership was to establish school as the most enjoyable place for the teachers to learn, through using an incentive strategy for the highest performing teachers. This leadership variable significantly affected changing teachers' competence ($\beta=-.478$, $p=.001$). Conversely, the punishment strategy for the less-performing teachers negatively affected their competences ($\beta=-.727$, $p=.001$). The two remaining variables had a negative effect on teacher competence, such as the public vs. private teacher education institution (TEI) ($\beta=-.293$, $p=.001$) and teaching load ($\beta=-.293$, $p=.001$). These suggested that, on average, the teachers who graduated from private TEIs were less competent than their counterparts and overloaded teaching hours were not effective in improving the teachers' competence. This implied that improving the quality of TEI and managing the overloaded teachers were the relevant policy issues to address.

The second model involved four factors such as teachers' competence (as measured by Teacher Competence test), teachers' characteristics, the quality of school management, and students' SES. The model involved eight variables that impact on each of the two instructional quality measures as dependent variables, such as traditional and student centered approach. The results are presented in Table 2.

Table 2. School leadership variables impacting on the quality of instruction

No.	Predictor	R	R Square	Adjusted R Square	Change Statistics		
					R Square Cha	F Cha	Sig. F Cha
A. Criterion: Student Centered Teaching							
1.	1. Participatory school planning	.522	.272	.271	.272	346.996	.000
2.	2. Early Education of the teacher	.553	.306	.305	.034	45.421	.000
3.	3. Status of TEI (Public, Private)	.586	.343	.341	.037	52.444	.000
4.	4. Incentive Strategy	.641	.411	.408	.068	106.235	.000
5.	5. School conducive to learning	.650	.423	.419	.012	18.478	.000
6.	6. Teacher Pedagogical Competence	.657	.431	.428	.009	14.521	.000
7.	7. Certified teacher	.670	.449	.445	.018	30.035	.000
8.	8. Teaching Experience (in years)	.672	.452	.447	.003	4.446	.035
B. Criterion: Teacher Centered Teaching							
No. Predictor							
1.	1. Teaching Experience (in years)	.408	.167	.166	.167	192.443	.000
2.	2. Punishment Strategy	.470	.221	.219	.054	67.237	.000
3.	3. Teacher Pedagogical Competence	.501	.251	.249	.030	38.758	.000
4.	4. Incentive Strategy	.531	.282	.279	.031	40.868	.000
5.	5. Status of TEI (Public, Private)	.610	.372	.369	.090	137.858	.000
6.	6. Participatory School Planning	.660	.436	.432	.064	108.607	.000
7.	7. Supervision by Principal	.702	.493	.489	.057	107.419	.000
8.	8. School conducive to learning	.727	.528	.524	.035	71.071	.000

The results of analysis showed that the main leadership predictors of the student centered approach were different from those of the traditional ones. The student-centered approach was affected predominantly by three main predictors, such as creating the participatory school planning ($R^2\text{-Cha} = 27.2\%$, $p=.001$), employing incentive strategy for the performing teachers ($R^2\text{-Cha}=6.8\%$, $p=.001$), and crafting school management conducive to teacher learning ($R^2\text{-Cha}=1.2\%$, $p=.001$). On the other hand, the traditional approach of instruction was mainly affected by three leadership variables that were bureaucratic in nature, namely: seniority ($R^2\text{-Cha} = 16.7\%$, $p=.001$), punishment strategy for the less-performing teachers ($R^2\text{-Cha} = 5.4\%$, $p=.001$), and frequent school supervision by the school principals ($R^2\text{-Cha}=5.7\%$, $p=.001$).

Based on these findings, the more professional school leadership (Table 2A) enabled teachers to promote progressive teaching activities that were centered at students. It was believed that putting students at the center of instruction had made students highly motivated to learn. However, the high level of teacher competence was only a necessary condition and yet not sufficient to improve learning. To be sufficient, teachers need support from a merit-based school leadership approach. This would create an incentive system that enhances teachers' motivation to continually update their competence level. This was an important leadership strategy to foster the growth of life-long learning capacity as the real measures of modern education.

At the other end, the bureaucratic school leadership environment as shown in Table 2B was one that encouraged teachers to use more traditional teaching processes, e.g., lecturing, reciting, memorizing, classroom exercise or seat work. This type of school leadership exercised school control that required teachers to comply with the leader and avoid punishment. This kind of environment may be considered successful by way of measuring academic test scores, but this would not contribute to creating a professional climate for teachers to work productively.

The third analytical model was designed to examine whether the student centered approach of instruction had a stronger effect than did the traditional one. A measured criterion used to examine the extent to which the two composite factors, traditional versus student-centered instruction, did affect. This model included three composite factors, i.e., the student's SES, which comprised parent education, parent occupation and kindergarten attendance; student-centered teaching, which consisted of teaching variables such as group dynamic, democratic teaching, recognizing the student's learning problems, thematic reading and writing, and solving the student's learning difficulties; and conventional teaching approach, which comprised lecturing, reciting, memorizing, classroom exercise, and frequency of theoretical tests. The results are shown in Table 3.

Table 3. The effects of SES and instructional approaches on mathematical literacy score

No. Predictor	B	S.E.	Beta Weight (β)	t	Sig.
(Constant)	26.351	2.559		10.296	.000
1. The Student's Socio-Economic Status	1.414	.113	.393	12.530	.000
2. Student-Centered Teaching Approach	.358	.059	.188	6.052	.000
3. Conventional Teaching Approach	-.173	.038	-.143	-4.554	.000

The results of analysis indicated an interesting difference between the effects of these two teaching approaches. The student's SES had significant and highest co-variance effects on student learning ($\beta=.393$, $p=.001$). After all, the effects of the other two factors were assumed to be *ceteris paribus* as the student's SES was held constant. On the one hand, the student-centered approach affected student math literacy score in a much stronger way ($\beta=.188$, $p=.001$) than did the other approach. This meant that the more frequent was the use of student-centered teaching, the higher the quality of student learning would be. On the other hand, the effect of the conventional approach was far lower ($\beta=-.143$, $p=.001$). Its effect was not only lower in magnitude but also negative in direction. It means that the more frequent was the use of conventional teaching activities, the lower the student's math literacy score would be. Therefore, it is essential to note that for the successful curriculum reforms it is important to improve the capacity of school leadership in discouraging teachers from using conventional rote learning while promoting the use of student-centered instructional approaches.

Conclusion and Implication

The influence of the student's SES that surpasses the effect of leadership and instructional variables implies that effective school reforms need home influences to be accounted for. The regularity remained consistent, however. This study found that better student learning was associated with the more frequent use of student centered instruction, democratic and merit base school leadership. The magnitude of the association varied with respect to the levels of the student's SES factor. It means that in the years to come, variation of school quality would be greatly associated with greater differences of family SES. Therefore, successful school reforms will be determined by unique leadership and instruction in which a close relationship between school and home does matter.

This also found that the student centered approach to instruction had a powerful effect on student learning; enabling students to learn at a high level of motivation. This suggests that individual schools and teachers are to develop and maintain students' learning capacity to become lifelong learners. This would come into effect only if the school reforms were targeted toward building school leadership, enabling school leaders to create a favorable climate for teachers to better teach and to frequently use the student-centered and thematic instructional approaches.

Finally, the schools in Indonesia had experienced the so-called centrally controlled bureaucratic leadership practices. This type of school leadership led to the

massive use of traditional rote learning instruction as the main source of the low quality of education. In fact, school principals were less prepared to become real professional leaders; they were teachers with additional tasks to carry out administrative chores. This implies that school reforms in the country would be successful through the establishment of school principals as professional agents of change.

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