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How Can Community Participation Improve Educational Outcomes? Experimental Evidence from a School-Based Management Project in Burkina Faso

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Abstract

Promoting community participation in school management is a widely found intervention in the developing world. While this type of program is generally believed to be effective, the actual evidence is not sufficient to inform policy makers on how community participation works in improving educational outcomes. To shed more light on this question, we conducted a randomized evaluation of an education program in Burkina Faso. The program was designed to build trust among community members and teachers, and encourage them to work together in school management. The results show that the intervention increased student enrollment, decreased student repetition, and lowered teacher absence. The results also indicate that it had a strong impact on class repetition by 6th grade boys, presumably reflecting parental priorities. This suggests that community participation can improve educational outcomes through empowering the community and enhancing social capital, but whether idealized results can be gained depends on the perception and the knowledge of the community members.

Keywords: school-based management, community participation, randomized controlled trial (RCT), education, impact evaluation

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1. Introduction

For the last two decades, school-based management (SBM) has attracted wide attention in the developing world. SBM is defined as decentralizing authority in school management from the government to agents at the school level; many SBM programs encourage community participation by establishing a school committee that includes parents and community members, and giving this committee decision making powers. SBM programs throughout the world vary in terms of what activities school agents are involved in. A school committee is given authority to implement one or more important school activities such as monitoring teacher and student performance, hiring and firing contract teachers, material procurement, school infrastructure improvement, and developing school improvement plans (Barrera-Osorio 2009; Bruns, Filmer, and Patrinos 2011).

In response to the enthusiasm for SBM, several studies have used randomized controlled trials to analyze the impact of community participation in school management in developing countries. In India, Banerjee et al. (2010) found that training community members to record student learning and enrollments had no impact on educational outcomes. In Kenya, Duflo, Dupas, and Kremer (2015) found that contract teachers who were hired by school committees raised student test scores and that SBM training for parents reduced rent seeking of centrally-hired civil-service teachers. In Niger, Beasley and Huillery (2014) found that providing grants to schools increased new student enrollment and improved school resources, although there was no impact on student test scores. In Indonesia, Pradhan et al. (2014) have shown that providing school grants and training for school committee members has limited or no impact, but that additional interventions such as the democratic election of committee members, and the facilitation of meetings between

the school committee and the village authorities generate positive effects on student learning. These results show that grant giving and training have limited or no effects, but that linkage and elections have positive effects on student learning. In Gambia, Blimpo, Evans, and Lahire (2014) found that comprehensive SBM training combined with school grants reduced student and teacher absence, and improved student learning in villages with high literacy, while it had the opposite results on learning in villages with low literacy.

It is understandable that these experiments recorded mixed results, since the types of intervention and their local contexts are different across countries. Even similar interventions may be different in detail; such as the content of training and the amount of school grants. It is therefore difficult to define whether SBM generally works or not in improving educational outcomes, but the question of interest to policy makers is what types of intervention might work given the existing local context in a country. To answer this question is difficult since there is yet to be sufficient evidence gathered, particularly in low income countries.

To contribute to the discussions in this field, we conducted a field experiment in a school-based management program, called the School for All Project, in Burkina Faso, in collaboration with the Japan International Cooperation Agency (JICA) and the Burkina Faso Ministry of Basic Education and Literacy. This experiment has important characteristics that can add value to the literature.

First, the program puts value on developing trust among community members and teachers to improve educational outcomes, rather than enforcing a stringent teacher-monitoring system, since the latter approach may create tension between a school and the community. This type of intervention is classified as a “weak” form of SBM in contrast to the “strong” form that gives the authority to fire and hire teachers to school committees (Barrera-Osorio et al. 2009). There is a contrasting view on the

effectiveness of the strong type of SBM: while Bruns et al. (2012) suggest that the weak version is not suffice to improve learning outcomes, Westhorp et al. (2014) claim that this type of confrontational approach can contribute to underperformance by teachers. This paper contributes to the discussion on this question by analyzing the effectiveness of a "weak" SBM program.

Second, unlike many SBM programs in other countries, the program in Burkina Faso does not utilize school grants or other financial resources from the outside community, but instead mobilizes labor and financial resources from community members. This approach is relevant in low income countries where the government does not have sufficient resources to up-scale school grants in the whole country, even when a pilot intervention has been found to be successful. To facilitate community participation and mobilization, strengthening accountability in school management is considered to be a key form of intervention, and therefore the program introduced secret ballots in electing school committee leaders, and held periodical resident assemblies where all community members could come together to discuss, approve, and evaluate the school development plan (Hara 2011; Honda and Kato 2013).

The results of our experiment show that the program increased student enrollments and teacher attendance, and reduced student repetition. We also found that the impact on the learning outcomes of 6th grade students was stronger than on the other grades. This result probably reflects the perception of parents, who tend to desire their children to pass the graduation exam and gain the certificate, which is important in the context of Burkina Faso. In sum, the intervention worked to improve educational outcomes in Burkina Faso. However, the results suggest that, at least in the short term, community participation had a heterogeneous impact. To improve early grades and the education of girls, additional interventions may be necessary.

The rest of this paper is organized as follows: The next section describes the program and the data collection for the evaluation. Section III explains the evaluation methodology used, and section IV presents the impact of the program on educational outcomes. The final section is the conclusion.

2. Experimental design

2.1 The context and the intervention

Burkina Faso is one of the countries facing huge challenges in primary education. Although it has recorded dramatic progress in the last decade, gross and net school enrollments remained at 85 percent and 67 percent respectively in 2012 (UNESCO 2015). In order to deal with this situation, decentralization in education is an important action for the country. Although Parents Associations (Associations de parents d'élèves, or APE) and Mothers Associations (Associations de mères éducatrices, or AME) have been used as school councils, they have had limited functions in school management (Chiche 2010; World Bank 2012). To involve a wider set of local stakeholders in school management, the Burkina Faso Cabinet issued a decree[1] to establish new school committees (Comité de Gestion de l'Ecoles, or COGES) in 2008, and stipulated that COGES would be composed of the local Mayor, the presidents of the APE and the AME, the school director, and representatives of teachers, NGOs and the teachers union. However, a detailed strategy was yet to be mapped out.

Against this background, the Japan International Cooperation Agency (JICA) and the Ministry of Basic Education and Literacy launched the School for All Project in 2009. A distinctive feature of the program is the introduction of elections to select

[1] Decret n°2008-236/PRES/PM/MEBA/MESSRS/MASSNMATD du 8 mai 2008.

new COGES members using secret ballots. The Government had already defined the COGES members by decree in 2008 as described above, but in addition to these members, the project added a new set of members: the COGES president and those persons in charge of community participation, enrollments of girls, monitoring, accounting, and auditing in the COGES, and enabled the community to select these new members by election. Any adult community member can participate in the voting once they are registered for the election. Introducing an election process was aimed at the creation of an open environment for community members to vigorously participate in school management, and to build their confidence by making COGES management transparent and representative of the community (Hara 2011)[2].

After the election, COGES members organize a series of community meetings in which any community members within the school district can participate. The agenda of the first meeting is to discuss the problems the school is facing, and based on this discussion COGES members formulate an action plan to be implemented within the school year. A second meeting is held to discuss and approve this action plan. A typical plan includes constructing and repairing school facilities such as classrooms, desks, and chairs, providing housing for teachers, and purchasing learning materials for students. Since most of the schools cannot expect external resources to be available, a COGES mobilizes financial and physical resources within the community to implement the school action plan. A third meeting is held for monitoring the implementation of the action plan, and a fourth meeting evaluates the COGES activities implemented in the past year. The same cycle is repeated every year: at the beginning of the new school year the COGES and the community

[2] This hypothesis was verified by three studies that analyzed the impact of the School for All project on the formation of social capital. Sawada and Ishii (2013) and Sawada et al. (2015) found that social capital was enhanced through conducting the election and a COGES's activities. Todo et al. (2015) have also suggested that this intervention fostered trust in others by showing that relatively poor parents in the treatment group are more likely to participate in the rotating savings and credit associations (ROSCAs).

members make a new action plan for the coming year, and implement, monitor, and evaluate it using their own resources.

To facilitate these practices by the COGES, the School for All Project conducted several types of training for education officials and COGES members. To establish a COGES, school directors attended two days training to learn how to organize community meetings and how to hold an election for the selection of COGES members. After the election, school directors, COGES presidents and accountants, and representatives from municipal offices participated in two days training for action plan making, implementation, monitoring and evaluation.

2.2 Sampling and data collection

To verify the effectiveness of this intervention, we conducted a field experiment in Ganzourgou Province, located in the central part of Burkina Faso. Utilizing the school list provided by the Ministry of Basic Education and Literacy, we partitioned a total of 279 schools in the province into 30 strata in terms of educational district (10 districts) and school type (3 types: public school, private Islamic school, and private Catholic school). By random assignment in each stratum, 141 schools were grouped into the treatment group, and the other 138 schools were put into a comparison group. During data collection, however, we found that some schools did not exist or had been closed. The final number of the schools found for the treatment group was therefore 138, and 132 were available for the comparison group, as shown in Table 1.

For the treatment group, the School for All project conducted training for school directors in January 2010, and the schools held COGES elections within a few months. After the election, the project conducted training for COGES members, and the COGES started community meetings. The project provided the same intervention

for the comparison group from November 2010, as this experiment was designed as phase-in program to allow all schools in the Ganzourgou Province to receive support.

To collect data for the evaluation we conducted several surveys, as summarized in Table 2. For educational outcomes and other school and stakeholders' characteristics, we conducted questionnaire surveys in December 2009 and January 2010 for baseline data collection, and in January and February 2011 for end-line data. At each school, surveyors interviewed the school director, one teacher from each grade, a set of 5 randomly selected students of each of the interviewed teachers, and the household head of each student. We also took data from student exams in March 2009 and July 2010. The exam in March was designed and implemented exclusively for this experiment, and its subjects included French and math. This first exam cannot be recognized as baseline data since the intervention had already started in December 2009. The second exam in July was conducted as a regular exam of Ganzourgou Province, but the data is available only for public schools. The subject of the second exam included French, math, science and social studies. In addition, we conducted public goods experiments to measure the amount of stakeholder voluntary contributions to public goods, as analyzed by Sawada et al. (2015).

3. Evaluation methodology

Given the random assignment of treatment and comparison schools, intent-to-treat effect (ITT) can be estimated by:

$$y_{ijk} = \alpha + \beta COGES_k + \gamma X_{ijk} + \varepsilon_{ijk}, \qquad (1)$$

where y_{ijk} is an outcome of a student i, teacher j, or/of school k; β is the treatment effect of interest, which is the integrated impact of training, elections, and the planning and implementation of school action plans; *COGES* is a dummy equal to 1 if a school is assigned to the treatment group, and 0 if otherwise; X is a vector of control variables that are thought to influence end-line outcomes, including the number of students, the number of grades in a school, the proportion of female students, the experience of the Directors and teachers, the types of teachers and their gender, the location of the school (rural or urban), and baseline outcome when available.

After data collection, however, we found that some treatment schools had not followed the expected procedure, while some comparison schools had conducted activities similar to the treatment group. We therefore also ran a two-stage least squares regression, where the variable "COGES" was instrumented using a dummy variable for "whether a COGES is really established," to estimate the local average treatment effect (LATE) (Imbens and Angrist 1994). To make sure of compliance, we utilized data on the timing of the election of COGES members, and whether a COGES had submitted a school action plan to the district education office. If a school was assigned as a treatment school, the school director was expected to attend training during January 2010, and hold an election soon after this training. However, in the end-line survey, some school directors from the treatment schools answered that the election had been held in a different period, while some directors of the comparison schools answered that they had conducted elections in the same period as that of the treatment school. Since the information provided by a school director can be wrong if they do not have an accurate record of the election date, we also checked whether a school action plan was submitted to the education office that is responsible for monitoring COGES activities. Thus, we regarded a school as having established a

COGES if the school director answered that they had held elections between January and March 2010, or if the COGES had submitted an action plan for the school year 2009/2010. Using this definition, 126 of the 138 treatment schools had established a COGES in the first year, while 7 of the 132 control schools had established a COGES. Compliance is summarized in Table 3.

4. Results

This section first describes school and teacher characteristics at the baseline survey, and sets the balance between the treatment and control schools. Then, we estimate the impacts on outcomes related to student enrollment and repetition, as well as their effect on teacher behavior. Finally, we estimate the short-term impacts on student test scores.

4.1 Baseline school characteristics

Table 4 lists the baseline school characteristics that we utilized in our analysis. The results of t-tests suggest that there was no systematic difference across treatment and comparison groups at the baseline. The number of students per grade was larger, and the proportion of female teachers higher in the comparison group than in the treatment group, but these differences were not statistically significant. The second row shows that the average number of the grades per school was almost four, which means that, on average, two grades are missing in the primary schools of the Ganzourgou Province. This problem is common in Burkina Faso since the capacity to accept students is limited in most of the schools, particularly in rural areas, due to the insufficient number of teachers and inadequate school infrastructure. The fourth and fifth rows show that repetition among boys and girls was almost 10 percent. Teacher

attendance at the baseline is shown in the second to last row. These data were collected by surveyors who visited schools without appointment, and checked whether teachers were at school. They show that teacher attendance was nearly 85 percent, which is higher than in countries like Gambia and Kenya (Blimpo, Evans, and Lahire 2014; Duflo, Dupas, and Kremer 2015).

4.2 Student enrollment and repetition

Table 5 presents the estimate of the impact on student enrollment. Both OLS and IV estimates show that the program increased the number of enrolled students per grade. This result is understandable, because by involving community members widely a COGES can reach parents of school-age-children and enhance their awareness in education, and thus increase enrollment. Table 6 gives our estimates of the program's impact on repetition rates. The repetition rates of male and female students in the comparison schools at the end-line was nearly 10 percent and 8 percent respectively, and the estimated treatment effects on their repetition were nearly 3 and 2 percent respectively. Table 7 shows the breakdown by grade and sex. While repetition rates are lower for both boys and girls at COGES schools, the point estimate is not significant for most grades. However, a huge impact was found in the repetition rates of boys in grade six: the repetition rate in the comparison group was 29 percent[3], and the estimated treatment effect was 12.5 percent.

[3] In Burkina Faso, the repetition rate of grade six students is much higher than those of the other grades because a lot of students fail the graduation exam, and parents want their children to repeat and gain the graduate certificate in the following year.

4.3 Teacher attendance

Table 8 displays the program's impact on teacher attendance, using data from unannounced school visit by surveyors. Teachers were about 5 to 6 percentage points more likely to be found at COGES schools than at non-COGES schools. This increase is not a small change, considering that the average attendance rate of teachers at non-COGES schools was almost 86 percentage points. Thus, the mechanisms that increase teacher effort deserve attention. Experience in other countries suggests that giving a school committee the authority to hire teachers on a contract basis and to monitor them is effective in improving teacher attendance (Duflo, Dupas, and Kremer 2015; Jimenez and Sawada 1999; Sawada and Ragatz 2005). However, unlike the school committees in those countries, the COGES does not have this type of function[4]. A possible alternative mechanism that impacts on teacher attendance is that a COGES and its community can enhance the motivation of teachers by supporting them with facilities, such as providing teacher housing, which is often found to be a COGES activity.

4.4 Learning outcomes

In Tables 9 and 10, we do not see any significant impact from the establishment of the COGES on student test scores, and the breakdown by grade does not change this result. This can be attributed to the early timing of the examination, which was conducted just 6 months after the election of COGES members. Since it takes a few months for a COGES to start activities after their election, the timing of the exam may have been too early to see the effects on the test score. Moreover, it should be

[4] In Burkina Faso, either permanent and contract teachers are hired by the central or municipal government, and COGES does not have the authority over personnel issues of these teachers (Yuki, Igei, and Demas 2015).

noted that many COGES activities are supplementing school infrastructure and supplies, rather than to directly improve student learning. It is therefore not surprising that COGES did not improve test scores within such short time period.

5. Conclusion

This paper has evaluated the short-term impact of a school-based management program in Burkina Faso. The results show that the program improved educational outcomes such as school enrollment and repetition rates, and reduced teacher absences. This indicates that a type of community participation that emphasizes community empowerment and social capital can work in improving educational outcomes, if the program is properly designed and implemented.

This lesson comes with a caveat, however. The program had a stronger impact on the repetition rates of sixth grade boys. This heterogeneous impact can be explained by the priorities of parents, who generally desire their children to pass the graduation exam and gain the certificate. In fact, COGES school development plans typically include activities for sixth grade students. This is a strength of this form of community participation, in the sense that the program captures the needs of the community, and directly improves the related outcomes that parents want. However, to improve overall learning and the education of girls, which are commonly put as priorities in the international discussion on such agenda as the Sustainable Development Goals (SDGs), dependence on community participation alone may not be sufficient.

A potential shortfall of community participation in education is also indicated by Blimpo, Evans, and Lahire (2014), who emphasized the importance of the capacity of a community with evidence that SBM intervention worked better in one with high

capacity. The results of our study suggests that the outcomes can also be affected by the knowledge and perception of community members in addition to the local capacity. If parents prefer boys rather than girls to have better education, as indicated by Akresh, Walque, and Kazianga (2013) in the context of Burkina Faso, intervention may need to include complementary devices to encourage parents to provide education for girls. Also, to improve learning outcomes, early grade education may be critical, although parents may want to allocate more resources to grade six students for their short-term goals. If parents do not have enough knowledge to improve student learning, the intervention should provide information on how to improve it.

The results of the present intervention also suggest that even a weak-type SBM, which does not have a stringent teacher-monitoring system, can motivate teachers to improve their behavior. This evidence alone, however, does not necessarily prove that this type of SBM performs better than a strong-type SBM that involves personnel decisions relating to teachers. We need to continue our efforts to understand the strength and the weakness of different types of SBM by accumulating more evidence.

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Table 1. Random assignment

CEB	Comparison Schools				Treatment Schools			
	Public	**Private**	**Franco Arab**	**Total**	**Public**	**Private**	**Franco Arab**	**Total**
Boudry I	14	0	3	17	14	0	2	16
Boudry II	11	0	7	18	12	0	8	20
Kogho	6	0	0	6	6	0	0	6
Meguet	11	0	0	11	11	0	1	12
Mogtedo	16	1	7	24	17	2	7	26
Salogo	7	0	0	7	6	0	1	7
Zam	13	0	3	16	14	1	3	18
Zorgho I	13	0	3	16	12	0	2	14
Zorgho II	7	1	0	8	7	0	1	8
Zoungou	7	0	2	9	8	0	3	11
Total	105	2	25	132	107	3	28	138

Table 2. Timeline of intervention and data collection

December 2009- January 2010	Baseline Questionnaire Survey
January 2010	Treatment Group: Training for school directors
January-March 2010	Treatment Group: Election of COGES members
March 2010	1st Student examination
July 2010	2nd Student examination
November 2010	Comparison Group: Training for school directors
November-December 2010	Comparison Group: Election of COGES members
January-February 2011	End-line Questionnaire Survey

Table 3. Compliance

CEB	Comparison Schools		Treatment Schools	
	Number of surveyed schools	Number of non-compliant schools	Number of surveyed schools	Number of non-compliant schools
Boudry I	17	1	16	0
Boudry II	18	0	20	1
Kogho	6	0	6	0
Meguet	11	0	12	0
Mogtedo	24	5	26	3
Salogo	7	0	7	0
Zam	16	1	18	1
Zorgho I	16	0	14	3
Zorgho II	8	0	8	1
Zoungou	9	0	11	3
Total	132	7	138	12

Note: If a treatment school did not hold an election in January-March 2010 or submit a school action plan to the district education office at the end of the school year 2010/2011, the school was regarded as non-compliant. If a comparison school held an election or submitted a school action plan in the period above, the school was also regarded as non-compliant.

Table 4. Baseline school characteristics

Characteristic	Comparison Schools		Treatment Schools		*t*-statistics for the null hypothesis of the same mean
	Mean	N	Mean	N	
Number of students per grade	42.097	120	38.682	129	1.356
Number of grades	4.25	120	4.333	129	-0.442
Proportion of girls	0.438	120	0.443	128	-0.502
Grade repetition-boys	0.094	120	0.096	128	-0.099
Grade repetition-girls	0.109	120	0.092	128	1.261
Director experience	5.231	121	5.323	127	-0.193
Teacher experience	6.019	119	6.308	129	-0.729
Proportion of female teachers	0.357	120	0.301	129	1.559
Proportion of contract teachers	0.546	119	0.588	129	-0.852
Teacher attendance	0.87	120	0.852	127	0.586
Located in rural area	0.91	122	0.931	131	-0.63

Table 5. Impact on student enrollment

VARIABLES	(1) OLS	(2) OLS	(3) IV	(4) IV
	Increase Rates in the Number of Students			
COGES	0.080***	0.062**	0.091***	0.071**
	(0.029)	(0.028)	(0.032)	(0.030)
Number of students at baseline		-0.003***		-0.003***
		(0.001)		(0.001)
Number of grades		0.046***		0.044***
		(0.010)		(0.010)
Director experience		0.004		0.005
		(0.004)		(0.004)
Teacher experience		-0.006		-0.005
		(0.007)		(0.007)
Female teacher ratio		-0.019		-0.009
		(0.055)		(0.052)
Contract teacher ratio		0.004		0.006
		(0.046)		(0.043)
Teacher attendance		0.092		0.094
		(0.064)		(0.060)
Female student ratio		-0.010		0.019
		(0.264)		(0.246)
Rural school		0.048		0.041
		(0.082)		(0.079)
Observations	246	234	246	234
R-squared	0.143	0.286	0.145	0.285
Mean and SD in Comparison Schools		-0.059		
		(0.239)		

Notes: The OLS coefficients on COGES show the intention to treat estimate (ITT), and the IV coefficients show the local average treatment effect (LATE). Strata dummies are included in all estimations but not shown. Robust standard errors are clustered at the school level and are in parentheses. The unit of observation is the school.

*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level

Table 6. Impact on repetition

VARIABLES	(1) OLS	(2) OLS	(3) IV	(4) IV	(5) OLS	(6) OLS	(7) IV	(8) IV
	Boys Repetition				Girls Repetition			
COGES	-0.027**	-0.023*	-0.031**	-0.027*	-0.016*	-0.018*	-0.018*	-0.021*
	(0.013)	(0.014)	(0.015)	(0.015)	(0.010)	(0.010)	(0.011)	(0.011)
Baseline repetition		0.103		0.103		0.030		0.026
		(0.091)		(0.086)		(0.048)		(0.045)
Number of students		0.000		0.000		0.001*		0.001*
		(0.000)		(0.000)		(0.000)		(0.000)
Number of grades		0.011*		0.011*		0.014***		0.015***
		(0.007)		(0.006)		(0.004)		(0.004)
Director experience		0.001		0.001		0.001		0.001
		(0.002)		(0.002)		(0.002)		(0.002)
Teacher experience		-0.001		-0.001		-0.001		-0.001
		(0.002)		(0.002)		(0.002)		(0.002)
Female teacher ratio		0.011		0.008		0.003		0.001
		(0.033)		(0.031)		(0.022)		(0.021)
Contract teacher ratio		0.013		0.013		-0.009		-0.009
		(0.019)		(0.018)		(0.015)		(0.015)
Teacher attendance		0.029		0.029		0.035		0.036*
		(0.026)		(0.025)		(0.023)		(0.021)
Female student ratio		0.004		-0.003		0.068		0.062
		(0.085)		(0.079)		(0.071)		(0.065)
Rural school		0.021		0.024		0.051**		0.053**
		(0.020)		(0.020)		(0.024)		(0.023)
Observations	253	224	253	224	221	194	221	194
R-squared	0.222	0.247	0.211	0.236	0.203	0.331	0.191	0.316
Mean and SD in Comparison Schools		0.098				0.077		
		(0.127)				(0.083)		

Notes: The OLS coefficients on COGES show the intention to treat estimate (ITT), and the IV coefficients show the local average treatment effect (LATE). Strata dummies are included in all estimations but not shown. Robust standard errors are clustered at the school level and are in parentheses. The baseline and end-line data were collected in Dec 2009-Jan 2010 and in Jan-Feb 2011, respectively. The unit of observation is the school.

*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level

Table 7. Impact on repetition by grade and sex

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV
	The Proportion of Repeating Students											
	Grade 1		Grade 2		Grade 3		Grade 4		Grade 5		Grade 6	
	Boy	Girl	Boy	Girl	Boy	Girl	Boy	Girl	Boy	Girl	Boy	Girl
COGES	-0.011	-0.010	-0.027	-0.009	-0.009	-0.028	0.024	0.005	-0.024	-0.009	-0.125***	-0.044
	(0.014)	(0.016)	(0.022)	(0.016)	(0.023)	(0.020)	(0.031)	(0.016)	(0.024)	(0.021)	(0.044)	(0.045)
Observations	198	174	205	182	174	155	148	133	151	139	141	134
R-squared	0.296	0.298	0.309	0.101	0.141	0.202	0.204	0.235	0.197	0.352	0.205	0.230
Mean and SD in Comparison Schools	0.053	0.049	0.083	0.051	0.077	0.064	0.082	0.056	0.103	0.081	0.288	0.247
	(0.106)	(0.085)	(0.182)	(0.116)	(0.139)	(0.141)	(0.143)	(0.082)	(0.158)	(0.152)	(0.288)	(0.263)

Notes: IV coefficients for COGES show the local average treatment effect (LATE). Strata dummies are included in all estimations but not shown. Robust standard errors are clustered at the school level and are in parentheses. The baseline is the school-level repetition rate. The baseline and end-line data were collected in Dec 2009-Jan 2010 and in Jan-Feb 2011, respectively. The unit of observation is the class. The number of observation declines in the higher grades (Grades 4 - 6), as a lot of schools do not have higher grade students in the Ganzourgou Province.

*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level

Table 8. Impact on teacher attendance

VARIABLES	(1) OLS	(2) OLS	(3) IV	(4) IV
	Probability that a teacher was present at an unannounced visit			
COGES	0.047*	0.049**	0.055*	0.057**
	(0.024)	(0.022)	(0.028)	(0.025)
Teacher attendance at baseline		0.030		0.032
		(0.057)		(0.056)
Number of students		0.001		0.001
		(0.001)		(0.001)
Number of grades		0.012		0.012
		(0.010)		(0.010)
Female teacher		-0.059**		-0.059**
		(0.025)		(0.025)
Contract teacher		0.023		0.025
		(0.031)		(0.031)
Director experience		0.001		0.002
		(0.003)		(0.003)
Teacher experience		-0.002		-0.002
		(0.002)		(0.002)
Rural		0.059		0.051
		(0.052)		(0.053)
Observations	1,128	914	1,128	914
R-squared	0.087	0.072	0.086	0.069
Mean and SD in Comparison Schools		0.863		
		(0.344)		

Notes: Linear Probability Model. The OLS coefficients on COGES show the intention to treat estimate (ITT), and the IV coefficients show the local average treatment effect (LATE). Strata dummies are included in all estimations but are not shown. Robust standard errors are clustered at the school level and are in parentheses. Teacher attendance at baseline is not the attendance of the same teacher but is the average teacher attendance rate at the same school. The baseline and end-line data were collected in Dec 2009-Jan 2010 and in Jan-Feb 2011, respectively. The unit of observation is the teacher.

*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level

Table 9. Impact on student test scores

VARIABLES	(1) OLS	(2) OLS	(3) IV	(4) IV
		Normalized exam score		
COGES	-0.000	-0.004	-0.000	-0.004
	(0.036)	(0.036)	(0.041)	(0.039)
Girl		-0.047**		-0.047**
		(0.020)		(0.020)
Contract teacher		0.063*		0.063*
		(0.038)		(0.037)
Female teacher		0.031		0.031
		(0.037)		(0.037)
Class Size		-0.004***		-0.004***
		(0.001)		(0.001)
Rural school		-0.153**		-0.153**
		(0.066)		(0.066)
Observations	4,448	4,072	4,448	4,072
R-squared	0.015	0.037	0.015	0.037

Notes: The OLS coefficients on COGES show the intention to treat estimate (ITT), and the IV coefficients show the local average treatment effect (LATE). Test scores are normalized so that the mean and standard deviation of the comparison group are zero and one. Strata and grade dummies are included in all estimations but are not shown. Robust standard errors are clustered at the school level and are in parentheses.

*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level

Table 10. Impact on test scores by grade

VARIABLES	(1) IV	(2) IV	(3) IV	(4) IV	(5) IV	(6) IV
	Normalized exam score					
	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
COGES	-0.109	0.0295	0.0179	0.0576	0.00604	0.0192
	(0.0678)	(0.0849)	(0.0857)	(0.0796)	(0.0512)	(0.0478)
Observations	852	753	694	750	659	740
R-squared	0.027	0.032	0.047	0.023	0.074	0.049

Notes: The IV coefficients on COGES show the local average treatment effect (LATE). Test scores are normalized so that the mean and standard deviation of the comparison group are zero and one. Strata dummies are included in all estimations but are not shown. Robust standard errors are clustered at the school level and are in parentheses.

*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level

Abstract (in Japanese)

要約

近年、多くの開発途上国において、地域住民に学校運営への参加を促す政策が実施されている。住民参加は教育のアウトカムを改善するために効果的であると一般的に考えられているが、住民参加がどのようにして効果を生み出すかという政策的に重要なエビデンスは十分に蓄積されていない。この議論に貢献するために、本研究ではブルキナファソの教育プロジェクトにおいてランダム化比較試験を実施した。

このプロジェクトは地域住民と学校教員の信頼関係の構築を重視し、彼らが共同で学校運営を改善することを目的としている。分析の結果、プロジェクトの実施により生徒の就学が増加し、生徒の留年率及び教員の欠席率が減少したことがわかった。特に 6 年男子生徒の留年率が大幅に減少しており、小学校の卒業資格を重視する親の意識がこの結果に影響を与えたと考えられる。この結果から、住民参加型の学校運営は、地域住民を啓発し、関係者の信頼を構築することを通じて教育のアウトカムを改善することが可能であるが、より望ましい成果を得るためには、住民の意識や知識が鍵となることが示唆される。

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