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Effects of school policies toward competitive and collaborative approaches on teachers' instruction and students' learning in schools in southern Thailand

Theera Haruthaithanasan

Department of Educational Administration, Faculty of Education, Prince of Songkla University, Pattani 94000, Thailand

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Abstract

The benefits were studied of school policies toward competitive and collaborative approaches to enhance student-centered instruction and student achievement. In conceptual models, competition and collaboration at school level affect the teacher level and then the student level, as well as instruction, and finally student achievement. The dataset consisted of survey data collected from a sample of 243 public basic schools in 4 southern provinces, Thailand. Structural equation modeling was used to explore the models and verify cause–effect relationships among the variables. The research findings confirmed the effectiveness of the competition and collaboration on the instruction, but not student achievement. Particular models of competition and collaboration relationships in the Thai context were proposed. The key findings were critically discussed to reflect Thailand's educational issues and their rationales, and then policy implications were proposed to improve Thai education and society toward the global standard.

Introduction

Based on the model of a free market in education, competition between and within schools normally occurs and stimulates every school to develop its organization, management, and services to be more flexible, efficient, and effective in order: 1) to respond to their parents and the community's needs and to keep them satisfied; 2) to conduct ongoing research and development on innovation in order to improve the educational quality toward excellence, particularly regarding student achievement; and 3) to maintain competitiveness and to attract more parents to send their children to the school (Mattei, 2012).

As the global trend in education reform moves toward the free market model (Adnett & Davies, 2005), educational policies have been proposed to support competition between schools, including: 1) decentralization as a form of school-based management, stimulating public schools to be private-school like (efficient, effective, self-reliant) and competitive with other schools (Bagley, 2006; Lubienski, 2003); 2) educational quality standard and assurance (EQSA) for school quality control (Bagley, 2006) and high-stake accountability, for example, school funding based on student achievement to motivate schools to develop their educational quality, so that the higher the outcomes, the greater the funding (Harris, 2012); and 3) parental choice, the parents' right to choose their child's school on demand, to promote freedom of choice and equality in high-quality education, such as a school voucher for disadvantaged groups (Lubienski, 2003) and this policy also stimulates schools to raise their education quality to attract parents to choose them; As Adnett and Davies (2005) claimed, competition within schools could raise the educational quality and student achievement by directly affecting students regarding student choice of classes and instructional styles, instructional development toward

E-mail address: h_theera@hotmail.com.
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student-centered learning approaches, and the alignment between school curriculum, instructional style, and student competency. Competition between students in the classroom also stimulates competitiveness (performance goal), self-esteem, active learning, and consequently raises student achievement (Deemer, 2004).

However, there are serious problems with an imperfect, free-market education system, particularly with governmental intervention on tuition-fee control, school funding, and EQSA, which can: 1) limit a school's autonomy and self-reliance; 2) introduce unfair competition with privileged schools; 3) encourage rent-seeking; 4) provide business over education where schools focus on profits, branding, quantity, and learning outputs (KPIs), rather than educational quality, the learning process, and academic freedom (Natale & Doran, 2012); 5) result in school isomorphism, with imitation among schools without innovation (Lubienski, 2003); and 6) engender widening social inequality (Harris, 2012).

On the other hand, based on theory and empirical evidence, the benefits of collaboration between schools are substantial, though school networks and partnerships among local schools for their educational quality development (Higham & Hopkins, 2007), with a university as the academic advisor, the private sector for funding and knowledge and skills sharing, and families and the community for parental involvement, social welfare support, and provision of learning resources. Collaboration within a school also potentially raises student achievement regarding the teachers' professional learning community (PLC) for ongoing professional and instructional development (Jaquith, 2013), as well as encouraging collaborative learning among students, and their learning community, with the constructivist learning approach and attitude toward mastering goals (Deemer, 2004).

In summary, a combination of both competition and collaboration between and within schools enhances their educational quality development much more than a focus on only one approach or level or both. However, theory and empirical evidence remain unclear about the relationships between competition and collaboration, particularly in the school context, and their effects on teachers' teaching and students' learning. Thus, this study aimed to explore and verify with empirical data the relationships between both school policy approaches and their effects among three group levels (school, teacher, and student) and then on student-centered instruction and student achievement. The empirical data were based on the Thai context, with Thai school cultures being the focus, particularly the domination of the highly centralized bureaucracy and teacher-centered instruction, as opposed to Western educational reform. As a result, the research findings may not perfectly align with the theoretical concepts but may bring out some unique Thai-style approaches.

Research Objectives and Hypotheses

1. To study the levels of competition and collaboration between and within schools, as well as the levels of student-centered instruction and student achievement;
2. To study cause–effect relationships between competition and collaboration between and within schools, and then their effects on student-centered instruction and student achievement. Based on the literature review, the hypotheses are 1) competition between schools boosts both competition and collaboration between teachers, and then competition between the students within the schools; 2) collaboration between schools boosts collaboration between teachers and students within the schools, as well as student-centered instruction; and finally, 3) all the factors would raise student achievement. A conceptual framework for this study is illustrated in Figure 1.

Research Method and Data

This quantitative research involved a cross-sectional, explanatory study to examine the theoretical model and explain the relationships among the variables, using primary data collected using a survey. The population was public basic schools in southern Thailand, so the sample was a group of the schools from Pattani, Yala, Narathiwat, and Songkhla provinces. Stratified multistage random sampling was applied so that in each province, schools were sampled proportionally according to the school district and school size, and then the administrator and two teachers were sampled from each selected school.

The data were drawn from a set of four 5-point-Likert-scale questionnaires for each school, consisting of a set of questions for the administrator about implementing the school policy approaches and three sets of questions for teachers about their work behavior, their students' learning behavior, and their instructional style. All school, teacher, and student behavior was focused on competition and collaboration issues. All the questionnaires were reviewed, adjusted, and confirmed in their construct validity (by experts) and reliability (Cronbach's alpha for each factor was in the range from.66 to .90). For each school, average 2016 official O-NET scores were used as a proxy for student achievement.

With the recommended sample size of 245 (as calculated using G*Power), 300 questionnaire packages were sent into the target schools, but only around 80 percent of them were returned, so the actual sample size was 243 schools, consisting of 97, 64, 66, and 16 schools from Pattani, Yala, Narathiwat, and Songkhla provinces, respectively. After gathering and entering the information, all data were cleaned up using the expectation maximization method to obtain maximum likelihood estimations with missing data. Then, each of the main variables was created by computing the mean score of its question items.

In the data analysis, according to Kline (2005), first, the basic assumptions were checked and mended, and then descriptive statistics were analyzed using means and standard deviations. Last, structural equation modeling (SEM) analyses, consisting of confirmatory factor analysis and path analyses, were conducted on a few conceptual models. All the linear regression equations were calculated using the R statistical software package, specifically the SEM package, "lavaan", using maximum likelihood estimation. In the SEM analyses, good-fit tests and model adjustments were conducted to improve the good-fit based

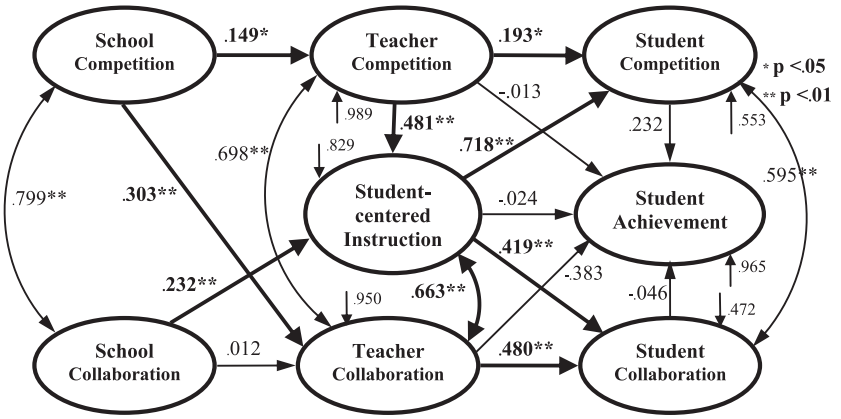

Figure 1 Structural model of relationships between competition, collaboration, student-centered instruction, and student achievement (Model 2 in Table 4)

on the theoretical concepts with recommended fit indices and their cut-off criteria.

Research Findings

In the descriptive statistics, all competition and collaboration (Table 1 and Table 2) were implemented at high levels except for school collaboration (medium level). For school policies on competition, doing business in education (mean; $M = 3.38$), and those on collaboration, networking with government agencies ($M = 3.03$) and the private sector ($M = 2.81$) were implemented at medium levels, but the others were at high levels. Within schools, for teacher and student behavior on competition, focus on school/learning outcomes had the highest outcome with competition with peers the least; for collaboration, collaboration with peers had the highest outcome, while building learning communities was the least.

Regarding student-centered instruction (Table 3), the teachers reported overall and each of its components at high levels; individualized learning activities were done most ($M = 4.00$), with high-order thinking activities least ($M = 3.68$). In addition, as a proxy of student achievement, the means of the 2016 National Educational Test (O-NET) scores on Thai, English, Mathematics, and Science were 39.27, 28.88, 29.60, and 34.49, out of 100, respectively.

In the SEM analysis (Table 4 and Figure 1), regarding the confirmatory factor analysis, except for "focus on school outcomes" for Teacher Competition, which was finally deleted, no indicators had low loadings to explain their factors (between .577 and .899), and except for the relationship between teacher collaboration and student-centered instruction (r = .913), there were no extremely high correlations among the constructs (between .036 and .883), showing a convergent validity and discriminant validity, respectively.

In Model 1, the original model, due to the trivial effects of Teacher Collaboration on Student Competition, and School Collaboration and Competition on the O-NET scores, those relationships were deleted in Model 2. In Model 2, the path from Teacher Competition to Student-centered Instruction was added, and Teacher Collaboration and the instruction were re-specified as a reciprocal relationship.

Table 1
Descriptive statistics of school policies toward competition and collaboration

Variables	*M*	*SD*	Level
Competition between schools[a]			
1. Responding to parents	3.87	.50	High
2. Research and innovation	3.75	.57	High
3. Business in education	3.38	.73	Medium
4. Efficiency and effectiveness	4.04	.51	High
Overall	3.76	.47	High
Collaboration between schools and other groups[b]			
1. Networks among schools	3.65	.65	High
2. Networks with governmental agencies	3.03	.81	Medium
3. Networks with the private sector	2.81	.96	Medium
4. Networks with families and community	3.87	.56	High
Overall	3.34	.61	Medium

Note: Level of implementation: very high (4.51–5.00), high (3.51–4.50), moderate (2.51–3.50), low (1.51–2.50), very low (1.00–1.50)
[a] 5, 4, 4, and 5 question items for its components respectively
[b] 4, 5, 4, and 5 items for its components respectively

Table 2
Descriptive statistics of teacher and student behavior within schools toward competition and collaboration

Variables	Teacher			Student		
	M	*SD*	Level	*M*	*SD*	Level
Competition within schools[a]						
1. Competition with peers	3.64	.55	High	3.52	.65	High
2. Determination in teaching/learning	3.94	.54	High	3.85	.47	High
3. Focus on school/learning outcomes	4.22	.50	High	3.87	.54	High
Overall	3.93	.41	High	3.75	.45	High
Collaboration within schools[b]						
1. Collaboration with peers	4.21	.48	High	3.86	.44	High
2. Learning community	3.69	.51	High	3.60	.56	High
3. Teacher empowerment	4.08	.45	High	*N/A*	*N/A*	*N/A*
Overall	3.99	.40	High	3.73	.46	High

Note: N/A = Not Applicable; Level of implementation: very high (4.51–5.00), high (3.51–4.50), moderate (2.51–3.50), low (1.51–2.50), very low (1.00–1.50)
[a] 2, 3, and 3 items for the teacher components and 3, 2, and 2 items for the student components respectively
[b] All 5 items for the teacher and student components

Table 3
Descriptive statistics of teachers' student-centered insrtuction[a]

Variables	*M*	*SD*	Level
1. Individualized learning	4.00	.46	High
2. High-order thinking skills	3.68	.54	High
3. Learning by doing	3.78	.49	High
4. Relevance to prior experiences	3.88	.50	High
5. Collaborative learning	3.96	.45	High
Overall	3.86	.42	High

Note: Level of implementation: very high (4.51−5.00), high (3.51−4.50), moderate (2.51−3.50), low (1.51−2.50), very low (1.00−1.50)
[a] 4, 4, 4, 5, and 5 question items for its components respectively

These modifications caused major changes in the model. When School Size and Urbanity were added, there were no major changes in Model 3.

Due to the control variables in Model 3 not being significant, Model 2 was selected to report, with School Competition having positive effects on Teacher Competition (b = .149 and Collaboration (b = .303), and then the latter had positive effects on Student Competition (b = .193) and Collaboration (b = .480), respectively. Despite there being no effect on Teacher Collaboration, School Collaboration (b = .232), as well as Teacher Competition (b = .481), had positive effects on Student-centered Instruction, and Teacher Collaboration and the instruction had a positive effect on each other (b = .663). The instruction had positive effects on Student Competition (b = .718) and Collaboration (b = .419). Finally, all the factors had no effect on the O-NET scores.

Discussion

Effects of School Competition

In the research findings, competition between schools stimulated teacher competition and collaboration within the schools, and then the latter stimulated student competition and collaboration, respectively. In order to raise school competitiveness, the administrators stimulate teacher competition to achieve higher performance, for example, raising student achievement (Adnett & Davies, 2005). On the other hand, the administrators need teacher empowerment and participation in school development (Stegall & Linton, 2012), and promote teacher

Table 4
Comparison of the SEM analysis results for a few conceptual models†

Good-fit Indices:	Model 1		Model 2		Model 3	
$\chi^2(df)$, p	χ^2 (284) = 510.461, p = .00		χ^2 (288) = 505.817, p = .00		χ^2 (326) = 554.747, p = .00	
CFI/TLI	.946/.934		.948/.937		.946/.933	
RMSEA (90%CI)	.057 (.049−.065)		.056 (.048−.064)		.054 (.046−.061)	
SRMR	.059		.063		.054	
Regressions:	*b*	*P*	*b*	*p*	*b*	*p*
TCmp						
SCmp	.156	.038*	.149	.047*	.150	.049*
SchSz/UrbAr	–	–	–	–	−.006/−.056	.938/.470
TCop						
SCmp	.281	.032*	.303	.006**	.326	.004**
SCop	.037	.775	.012	.913	.003	.980
SchSz/UrbAr	–	–	–	–	−.048/−.106	.568/.199
PCmp						
TCmp	.094	.240	.193	.036**	.192	.006**
TCop	.232	.221	–	–	–	–
SCI	.577	.001**	.718	.000**	.727	.000**
SchSz/UrbAr	–	–	–	–	−.010/.077	.855/.180
PCop						
TCop	.368	.014*	.480	.004**	.489	.003**
SCI	.537	.000**	.419	.009**	.416	.009**
SchSz/UrbAr	–	–	–	–	−.077/.072	.142/.178
SCI						
SCop	.053	.351	.232	.000**	.236	.000**
TCmp	–	–	.481	.000**	.477	.000**
TCop	.859	.000**	–	–	–	–
SchSz/UrbAr	–	–	–	–	-.013/.100	.841/.126
ONET						
SCmp/SCop	.053/.098	.712/.499	–	–	–	–
TCmp/TCop	−.022/−.400	.837/.160	−.013/−.383	.946/.495	−.055/−.244	.771/.655
PCop/SCI	−.049/−.042	.855/852	−.046/−.024	.880/954	−.099/−.078	.751/847
PCmp	.269	.240	.232	.353	.272	.284
SchSz/UrbAr	–	–	–	–	−.072/−.033	.355/.665
Covariances:						
SCI-TCop	–	–	.633	.000**	.664	.000**

Note: b = standardized coefficient; p = significance level; df = degree of freedom; *90%CI* = 90% confident interval; **p < .01; *p < .05; SCmp = School Competition; SCop = School Collaboration; TCmp = Teacher Competition; TCop = Teacher Collaboration; PCmp = Student Competition; PCop = Student Collaboration; SCI = Student-centered Instruction; ONET = National Test Scores/Student Achievement; †Added covaraince in the measurement level: SCmp4-SCop4, TCop1-PCop2, SCop2-SCop3, TCop1-TCop3, SCmp3-SCop3, PCop2-SCI2, SCmp3-SCop2, TCmp1-PCmp1, SCop3-PCmp1, SCI4−SCI5, SCmp1-TCmp1, TCop1-SCI2, TCmp2-PCmp1, TCmp2-SCI1, TCmp2-SCI4, TCop2-SCI5, SCop4-PCmp1, Thai- Eng.

collaboration to raise the instructional capacity (Jaquith, 2013). Then, teacher competition brings a competitive atmosphere into the classrooms by stimulating the student competition for higher performance, such as working and learning to achieve good grades, but the teacher collaboration creates a collaborative atmosphere by promoting the students' collaborative learning to raise their individual learning capacity. However, as shown in the findings, collaboration is preferred to competition within schools regarding maintaining a healthy, supportive work environment, compared to the latter's more stressful and harsher approach.

Effects of School and Teacher Collaboration

Hypothetically, school collaboration toward building professional learning communities (PLCs) among the administrators and teachers across schools, with the focus on active, ongoing instructional and student development, enables building and enhancing PLCs within each school (Higham & Hopkins, 2007), which promote and support teacher collaboration. However, the nature of passive, loose collaboration among Thai schools may not reach the level of PLC so that in the findings, school collaboration could not stimulate teacher collaboration within the schools.

However, at least, school collaboration in the Thai context supported student-centered instruction within the schools regarding visiting best-practice schools for teachers to learn creative instruction and by sharing learning sites for students among schools.

In the same way, teacher collaboration in the form of PLCs, where teachers work together on their instructional research and development through observation of individual students' learning and reflective discussion (Doig & Groves, 2011), supports student-centered instruction; in turn, with such complex, creative approaches with the focus on the learning process rather than outcomes, student-centered instruction needs teachers' collaboration to brainstorm and craft their instructional techniques.

Then, student-centered instruction, based on the notion that students learn in their own ways to construct their own knowledge, promotes both student competition and collaboration in the classrooms to gain double learning benefits (Deemer, 2004; Haertel, 1997). Student competition, with the learning focus on "performance" goals, stimulates students' learning determination, activeness, self-efficacy, and individuality, whereas student collaboration with the learning focus on "task/mastery" goals, promotes the senses of learning community and teamwork to help and empower individual learners, as well as share and co-create their new knowledge with peers. All the hypotheses above were verified by the findings.

Surprising Effects of Teacher Competition

In the findings, teacher competition supported student-centered instruction. As Adnett and Davies (2005) explained, in the case of a decentralized, open school environment, where teachers are empowered and autonomous in their competition, they are likely to provide the students with a variety of curricula, courses, and instructional approaches, and work on their individual instructional development based on the students' needs and interests, or toward student-centered approaches. However, in the Thai context, despite the school reform toward school-based management (SBM), all the schools have been highly centralized by the Ministry of Education (MOE). In particular, the high-stake evaluation of school and teacher performance being based on the students' O-NET scores to define student achievement, stimulate the teachers to heavily focus on student learning outcomes instead of process, and this distances them from student-centered instruction.

One rationale for this finding when considering the sampled schools located in remote areas, far away from the central control (MOE), would be that most schools have an administrative culture that is loose, relaxed, and even ignorant (Ockey, 2004; Runglertkrengkrai & Engkaninan, 1987) so that the teachers are flexible in their instructional approaches and student-outcomes reports. As regulated in the current school reform, student-centered instruction and its student outcomes are the major performance evidence Thai teachers are likely to generate, rather than high O-NET scores, regarding clearly reporting the student outcomes as more productive, for example, students' individual work pieces, projects, and inventions based on their interests (see the empirical evidence from most Thai teachers' self-assessment performance reports, which provided their students' awards in academic and project competitions along with low O-NET scores). One big issue here is that Thai teachers have focused their student-centered instruction on the quantity rather than quality, and on learning outcomes rather than process, due to their lack of understanding of the student-centered learning concept and techniques, as well as the MOE's policy on teacher and school quality evaluation with the heavy focus on student achievement (Fry & Bi, 2013; Hallinger & Bryant, 2013).

The Ineffectiveness on the O-NET Scores as Student Achievement

Unfortunately, all the expected factors were not significant regarding using O-NET scores as a measure of student achievement. This finding is repetitive (see, Haruthaithanasan, 2018) and confirms that ONET scores are a poor measurement of student achievement because no matter what factor (even school, teacher, and student competitions as hypothetical key factors) it was not possible to the achievement level. The inconsistent and poor quality of ONETs would be the issue behind this finding. In addition, the finding indicates student-centered instruction, and teacher and student collaboration, negatively affected the O-NET scores. These factors, theoretically, are well aligned and are opposed to teacher-centered instruction as well as O-NET scores. That is, as standardized tests, O-NETs focus on closed-ended questions and content knowledge, so rote learning, drilling, and tutoring on previous tests were common matching learning and teaching methods toward teacher-centered learning approaches.

Policy Implications

Promoting Competition among Schools

In the free market of education, public schools are stimulated to be active and self-reliant in order to compete with other schools, including private ones. So far, Thailand's MOE has been promoting school competitions through school reform, i.e., SBM, and the policy of "parental/school choices", in which schools get government funding based on a student headcount. Hence, every school has to raise its competitiveness by raising student achievement, as well as educational quality, to attract parents to send their children to it. Particularly, in the Thai context based on the findings, school competition could stimulate teacher competition and collaboration and then support student-centered instruction within schools.

However, there are main cautions regarding school competition: 1) public schools as a public service are needed for low-SES groups with regard to social equality, so they need the government's school funding and quality control, as well as support and upgrading the schools to be strong against private schools (particularly business skills); 2) government intervention should be used infrequently if possible, particularly educational standards and rules; for example, curriculum and price control (causing school isomorphism, low school quality, and low competitive atmosphere) should be flexible, based on local community needs, and open to parental support and funding; 3) low-SES parents should be informed and advised about school choices; 4) the MOE should watch and control school competition without extreme, destructive conditions (causing schools focusing on business over education, and shortchanging the students and society) as well as promoting the schools' research and development for educational innovation.

Promoting School and Teacher Collaborations in the Form of PLC

There have been loose networks of local schools nationwide, so they need to be upgraded to the partnership level, at which PLCs for administrators and teachers across school members are formed with aims to develop curricular and instructional innovation, to share best practices, and to help and support schools in need. In turn, they could initiate and/or support teacher collaboration toward PLCs, as well as the students' learning community, within schools. The Japanese PLC model, "Lesson Study", adaptable to the Thai context, is recommended. That is, a teacher team works on ongoing instructional development based on the students' potential and progress, with the cycle of planning, doing (teaching and observing individual students' learning in the classroom), discussing, and improving the lesson (Doig & Groves, 2011). The double benefits of PLC are instructional and teacher development toward student-centered learning approaches. Moreover, PLCs are enhanced by coaching and support from university professors, school superintendents, and the local community.

Promoting Teacher Competition in a Constructive Way

This recommendation is for well-prepared schools with an individualist culture (large-sized or secondary schools). The constructive way means teacher competition toward the development of student-centered instruction, focusing on both learning process and outcomes. In the Thai context, teacher competition is likely to support student-centered instruction. However, individual teachers need to be prepared through professional development programs and PLCs for student-centered learning concepts and techniques, instructional research and development skills, and particularly attitudes toward instructional excellence and innovation. In addition, the school administrators need to seriously monitor and supervise teacher competition in both instructional quality and student achievement.

Improving the Indicators of Student Achievement and School Quality

In addition to the O-NETs' quality improvement, multiple indicators, other than standardized test scores, should be used to measure student achievement, particularly the results of constructivist evaluation on thinking and performance skills. The school and teacher qualities should be measured along with student achievement, the student learning process, and instructional quality. There should not be a high-stake evaluation, but school and teacher evaluations should be formative and based on the school context, with help and support for improvement, instead of punishment.

Conflicts of interest

There is no conflict of interest.

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