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**Policy Evaluation by Governance Perspective:
The Case of Creativity Education Policy in South Korea**

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This research examines the effect of grants and regulation as policy tool, school management and teacher expertise as street level administration, and implementation condition on policy performance in creativity education policy in South Korea applying the governance model Lynn, Heinrich, and Hill (2000) developed using both secondary administrative data and survey data gathered from 219 elementary school teachers. It is found that while neither CE Model School grants nor textbook properness to CE regulation has statistically significant relationship with performance in all three models both variables in street level administration have statistically significant and positive relationship with performance.

Key Words: policy performance, governance perspective, policy tools, street level administration

Introduction

South Korean education has been praised for both its role in economic development and its comparatively high international performance rankings (OECD, 2009; 2011a; 2013). However there are growing worries that the education system hinders the development of the students' creativity which has been touted as the most important quality for the 21st century and has become a growing interest area within education circles as well as wider society. That is, Korean education system represented by one-sided lectures by teacher and student assessment by multiple choice questions may no longer be effective in the era of information technology and globalization.

To solve the problems, with the inauguration of the Lee Myung-bak Government in 2008, CE(hereinafter referred to as CE) Policy was introduced in order to foster globally creative humans throughout the elementary and secondary school levels. The aims of CE Policy are to stimulate the creativity of students by introducing teaching and learning methods such as discussion, experimentation, practice, and presentations. Another goal is to lessen the dominance of rote memorization and multiple choice tests by introducing more comprehensive student assessment including problem solving capability of student. Teachers are encouraged to use different educational methods for developing student creativity, and to foster the ability to solve problems creatively.

In South Korea, national level education policies are usually made through both changes in rules, such as curriculum and grants for detailed project implementation to achieve policy goals. The same is true for the CE Policy. In advance the government-funded development projects in CE Policy include the CE model school grant and subject classroom facility grant. The other policy tool is to change the educational curriculum to fit CE including textbook amount adjustment, fewer subjects per a semester, and block scheduling system.

This research aims to analyze policy performance to draw more appropriate explanation of significant differences in policy performance and more contribution to policy design and implementation. That is, in this research, I focus on “What account for policy performance?” The effect of grants and regulation as policy tool, street level administration and implementation condition on policy performance in creativity education policy in South Korea is examined applying the governance model Lynn, Heinrich, and Hill(2000) developed using both secondary administrative data and survey data gathered from 280 elementary school teachers.

Modelling Policy Performance

Trends at the beginning of the 21st century showed the state expanding further into the realm of service delivery, where it became more active in employing third parties and Private-Public Partnerships (PPPs) to meet citizens’ needs (OECD, 2016:16). All phases of the policy including formulation, implementation, and evaluation have complicated with many stakeholders participating. With these changes, it has become difficult to identify the determinants of a policy success. The outcomes, efficiency, or effectiveness of numerous administrative entities vary significantly.

Confronting this variation in performance, policy makers, stakeholders, and program evaluators want to know what accounts for such significant differences (Lynn, Heinrich, and Hill, 2000). Frederickson(2012) argues there are problems with existing empirical policy research which have weak theories governing the specification of model variables. It leads to the limited explanation of significant differences in policy performance and poor contribution to policy design and implementation.

Lynn, Heinrich, and Hill(2000) developed the governance model that policy performance is a function of policy variables such as appropriate policy tools and street level

administration such as street level bureaucrat capability to strengthen the theories governing the specification of model variables. Also Lipsky(1980) has emphasized the impact of street level bureaucrat on the achievement of the policy goals. That is, it suggests that the actions of street level bureaucrat may diverge from the stated and intended goals of policy, which can result in policy failure or unintended results. The actions of street level bureaucrat may diverge from the behaviour to achieve the policy goals(Lipsky, 1980), and the risk of divergence increases in specialized and complex administrative systems. Therefore, O'Toole(2000) argues that the reality of policy implementation stands just as much in need now of valid and usable knowledge as ever. The translation of higher level goals into street level actions is subject to a variety of influences, some of which conflict each other. These range from the extent of political support (Keiser and Soss 1998), organizational arrangements (Hill, 1974), the administrative emphasis of policy goals (Ewalt and Jennings, 2004; Riccucci, 2005), human resource capacity(Winter, 1986), managerial supervision(Brehm and Gates, 1997; Brewer, 2005; Riccucci, 2005), and others.

These explanations are common in all policy areas, but they are particularly relevant in education policy, regulatory policy, and welfare policy. This is because the impact of variables associated with street level administration and implementation condition on the achievement of the policy goals are more important in these policies than in other policies. Recently, there has been much research on delivery system in the field of regulatory policy(Kim, J.H., 2013) and welfare policy(Kim, K. H., 2013; Kim, J.H., 2014), and education policy(Kim, Y.B., 2013).

In this research, performance is identified as a function of three sets of variables, considering the specific context which integrates administrative structures and client characteristics into implementation conditions variables using the governance model developed by Lynn, Heinrich, and Hill(2000) and policy implementation theory discussed by

Meier, O'Toole, and Nicholson-Crotty(2004). Ewalt and Jennings(2004), Yi and Feiock(2014) have showed policy performance is a function of policy variables and street level administration linked to Lynn, Heinrich, and Hill's(2000) five sets of governance variables: environmental factors, client characteristics, treatments, administrative structures, and managerial roles and actions.

One set of variables captures signals from policy tools. A policy tool is one of the key factors which have a major impact on how implementation will occur and how successful it will be (Elmore, 1987; Goggin, 1987; Lynn, Heinrich, and Hill, 2000; Yi and Feiock, 2014). The term policy tool has been suggested as new paradigm of policy and public administration which have characteristics of network, collaboration, negotiation and persuasion, and enablement skills (Salamon, 2005, 9). While there has been diversification and change to the extent that the research on policy tools has been characterized as a "big bang" (Issalys, 2005: 157), both the identification and the type have been ambiguous and complex (Chun, 2007: 262).

A number of common features have been found in the conceptual definition of policy instruments or tools proposed by many researchers (Chun, 2007). Policy tools are, firstly, purposefully designed techniques or means, secondly, used by the government or similar public actors, and finally aimed at achieving policy goals or solving collective problems. Based on these common points, policy tools, in this research, refer to the means used by the government to address public problems.

Grants and regulation are policy tools most commonly used to accomplish goals in many fields, particularly in education policy (Craft, 2003: 121).

Conceptually, regulation can assume many different meanings. While it can be understood narrowly as "authoritative rules" usually set by governmental institutions, it can also be understood as an umbrella term for "all mechanisms of social control, by whomsoever

exercised” (Jordana and Levi-Faur, 2004:3). In this research, regulations is identified as rules and directives authorities impose to mandate behaviour in accordance with public policy as Helgøy and Homme, 2006: 143) argues. The type of national curriculum with respect to the degree of detail regulating and the amount of standardisation in organising teaching is one of crucial policy tools in education policy.

Grant, the other policy tool, is a payment from a donor government to a recipient organization or an individual with the aim of either “stimulating” or “supporting” some sort of service or activity by the recipient (Bean and Conlan, 2002: 341). Through grant, a governmental agency (the grantor) participates in the provision of a service, while leaving to another entity (the grantee) the task of actual performance. Numerous government-funded education projects and development programs are formulated and implemented by related central ministries and agencies.

The second set of influences is individuals who actually implement the policy. One of questions to be explored is the extent to which policy performance depends on the competence and reliability at the street level of government (Lynn, Heinrich, and Hill, 2000: 235). Kenneth and O’Toole have provided consistent findings that change at the service-delivery level is heavily dependent on implementing agency’s street level administration (Ewalt and Jennings, 2004). For example, in a study of the educational performance of Latino students in Texas schools, Meier, O’Toole, and Nicholson-Crotty (2004, 31) found that managerial influence “cade[s] through the governance system” and has both direct and indirect effects on student performance.

Third, a particular governance arrangement is embedded in a wider social, fiscal, and political context (Lynn, Heinrich, and Hill, 2000). Implementation conditions are socioeconomic and political features that are inherent to the context of policy implementation to affect performance.

Creativity Education Policy in Korea

From the last decade of the 20th century onward, there have been an increasing number of global reforms of education. Through these reforms, creativity has been touted as the most important quality for the 21st century and has become a growing interest area within education circles as well as wider society (Barron, 1988: 77; Craft, 2003; Henry and Walker, 1991; Ripple. 1989, 199). While creativity is a heterogeneous word in educational parlance¹, creativity education policy has been introduced in many countries in response to the global economic environment (Woods et al., 1997).

For example, in the U.K., the emphasis and value placed on encouraging creativity has grown as policy makers have introduced a number of reforms to encourage creativity in education (Nicholl and McLellan, 2008). Creativity has become a central component of national educational curriculum and there are many initiatives aimed at fostering individual and collective creativity (Craft, 2003:115; NACCCE,1999; Nicholl and McLellan, 2008; Stronach, 2010). Numerous government-funded projects related to education have been initiated by the Department for Culture, Media and Sport, the Department for Education and Skills, as well as other bodies such as the Qualifications and Curriculum Authority.

In Korea, creativity education policy was introduced 2010. Though Korean education has been praised for both its role in economic development(Guo,2005,75) and its comparatively high international performance rankings(OECD, 2009; 2011a; 2013; Song, 2013), there have been growing worries in Korean society that the education system hinders the development of the students' creativity. That is, Korean high school education system represented by one-sided lectures by teacher and student assessment by multiple choice questions (MOE, 2010; BAI, 2013), may no longer be effective in the era of information technology and globalization.

¹ Politicians and economists would use the term instrumentally by binding it to the future needs of the workforce, while romantic individualists would return us to a naive bygone age of authentic self-expression(Gibson , 2005: 148).

To solve the problems, with the inauguration of the Lee Myung-bak Government in 2008, the Minister of Education, Science and Technology (MEST)² introduced “Creativity Education Policy (CEP)” in order to foster globally creative humans throughout the elementary and secondary school levels. The documented aims of CEP are to stimulate the creativity of students by introducing teaching and learning methods such as discussion, experimentation, practice, and presentations. Another goal is to lessen the dominance of rote memorization and multiple choice tests by introducing more comprehensive student assessment including problem solving capability of student (MOE 2010). Teachers are encouraged to use different educational methods for developing student creativity, and to foster the ability to solve problems creatively (BAI, 2013; MOE, 2010; 2011).

As such, the implementation goal of CEP in Korea is to transform the curriculum from uniform to specialized, to move from lecture-based instruction to higher engagement activities, to introduce comprehensive evaluation instruments which measure creative problem solving capability and to shift the education system’s focus from entering a top-ranking collage to promoting creative-thinking. Based on these goals, the performance variables in this research are: (a) use of CE teaching methods in class; (b) comprehensive assessment of student; (c) increasing student’s creativity

The government-funded development project includes the CE Model School grant and subject classroom facility grant. The former is to support the cost of improving school management effectual with CE. The total budget is 171.8 million dollars with the number of schools at 2,627 in 2012. About 65,000 dollars on average to each school and the time period is three years. The latter is intended to support the remodeling classroom by subject. The total budget is 200 million dollars and the number of schools was 1,400 in 2012. 300,000 to 700,000 dollars was given to each school in proportion to the number of classrooms

² In 2008, the function of science and technology was integrated into the MOE (Ministry of Education) to be the MEST. Yet in 2013, the function of science and technology was separated, thus the MOE was established again. In this paper, I will use the term ‘MOE’ to represent a Korean central government body in charge of education.

remodeled. Most of the subject classroom facility grants were paid to middle school and higher middle school because subject classrooms were emphasized to middle school and higher middle school.

The other policy tool is to change the educational curriculum distinctive for CE including textbook properness to CE, fewer subjects per a semester, and so on. First, the amount and content of textbooks should be adjusted for CE which requires education method different from previous knowledge-centered education. In Korea, the amount of textbook-based learning is excessive and teachers have difficulties in using CE teaching methods in class (MOE, 2010). Fewer subjects per a semester system is to lessen the student's burden thus to deepen the study of each individual subject. Each school, by law, could voluntarily organize which subjects are learned under the condition that the total class time is met. Fewer subjects per a semester system is aimed at mostly middle school students and higher middle school students. These school curriculums are kind of steering criteria and basic rules for goals, process, evaluation and all activities in education and school. In Korea all schools have to observe this national and basic curriculum (Korea's Elementary and Secondary Education Act Article 23)³.

Hypothesis

I identify performance as a function of three sets of variables: policy tools, street level administration, and implementation conditions.

Policy Tools

³ Article 23 (Curricula, etc.) (1) Schools shall operate curricula. (2) The Minister of Education shall determine basic matters on standards and details of the curricula referred to in paragraph (1), and the Superintendent of an Office of Education may determine the standards and details thereof according to actual circumstances of a region within the scope of the curricula determined by the Minister of Education. (3) Subjects taught at schools shall be prescribed by Presidential Decree.

Government-funded projects vary in terms of their time span, budget size, applied subjects, and so on each of which performs differently (Crafts, 2003). While some research have found that the scales of improvement are modest at best and the influences are muted (Brehm and Gates, 1997; Knapp 1987; Riccucci, 2005), a federal block grant could be a useful tool as it expands the use of educational technology, bolsters curriculum and staff development, provides seed funding for local improvement initiatives among a large numbers of districts, and so on. The following grants policy tool hypotheses guide this empirical investigation. In this research classroom facility grant is excluded from analysis model.

Hypothesis 1.1: A teacher who works in a school with CE Model School grant has higher performance than a teacher who works in a school without it.

Curriculum regulation in education policy has been one of the key policy tools in education reform to foster creativity (Craft, 2003: 115). It is known that a fixed and compulsory curriculum which involves a great deal of propositional knowledge may pose more challenges to stimulating creativity (MOE, 2009). Too much textbook amount and many subjects prohibit teachers from using CE teaching and learning methods such as discussion, experimentation, practice, and presentations. Less textbook amount and fewer subjects per a semester regulation could give more time to students to think deep. It is expected to be strongly positively associated with more use of CE teaching methods in class, more comprehensive assessment of student, and increasing student's creativity (Weller and McLeskey, 2000; Lewis et al., 2005).

Less textbook amount and fewer subjects per a semester regulation could give more time to students to think deep. It is expected to be strongly positively associated with more use of CE teaching methods in class, more comprehensive assessment of student, and increasing student's creativity (Weller and McLeskey, 2000; Lewis et al., 2005). In this

research fewer subjects per a semester regulation is excluded from analysis model because it is of higher middle or middle school students.

Hypothesis 1.2: The higher the extent that a teacher think the amount of textbook is proper to CE is, the higher performance is.

Street Level Administration

In this research, street level administration refers to the extent to which the client has been placed in specific work activities, such as a school's management and a teacher's expertise. Performance is expected to be a function of how successfully managerial effectiveness follows through on policy goals. As Goggin et al. (1990, 130) put it, "No matter how clear the policy message is, no matter how high the level of capacity of a given state is, and despite an appropriate formal organizational structure, skilful and committed program management seems important for implementation success." Findings of recent scholarship on public management reinforce the basic point that "management matters" (Boyne, 2003; Brewer, 2005; Kim, 2008; Kim and Cho, 2015; Moynihan and Pandey, 2005; Nicholson-Crotty and O'Toole, 2004; Im and Lee, 2012). Previous research findings about managerial influence on policy performance lead to

Hypothesis 2.1: The more effectual School management is with CE, the higher performance is.

Implementation research has given attention to implementers. More than three decades have passed since Lipsky's (1980) seminal research on street level bureaucracy, and recent conceptual and empirical research continues to explore critically important questions of this unique type of public servant (Brodkin, 2011; Maynard-Moody and Musheno, 2012; Oberfield, 2010; Resh and Pitts, 2013). Given the key role of frontline workers in policy

implementation, continued research is necessary to understand better how policies are actually executed (Bovens and Zouridis, 2002; Hill, 1974; Lipsky, 1980; Maynard-Moody and Musheno, 2012; Riccucci, 2005).

Teacher, a kind of street level bureaucrat, is expected to be the most strongly associated with performance (OECD, 2011b). Whitehurst, Chingos, and Gallaher(2013) which analyzed 10 years of data involving all public school in Florida and North Carolina shows that while the effect of school management is about as twice as that of districts, the effect of teachers is about seven times larger than that of districts. Also many research findings show that for street level bureaucrat, including teacher, expertise is strongly associated with policy performance (Toh et al., 1996). In other words, the actual provision of services and the imposition of mandates on clients begin with expertise of the implementers (Ewalt and Jennings, 2004).

Which characteristics of teachers matter? Toh et al. (1996) argues that teacher expertise is an important determinant in the pursuit of educational excellence. Meyers and Vorsanger (2003) argues that the expertise of a street level bureaucrat is considered to determine the action in implementing policy. This basic observation has been born out in studies of street level bureaucrat' role in implementing policy programs (Meyers, Glaser, and MacDonald, 1998), as well as in a ethnographic study by Maynard-Moody and Musheno(2012) of how “cops, teachers, and counsellors” view their roles. The following hypothesis is thus proposed.

Hypothesis 2.2: The higher expertise for CE of a teacher is, the higher performance is.

Implementation Conditions

In Korea, class size, subject relevance to school college entrance examination, parental support, school district trait, and so on are examples of environment variables that restrict the

performance of education policy.

In this research while the extent of relevance of a subject with the college entrance examination is one of the strongest factors that determine the recognition, behavior, and performance of all actors in Korea, the variables associated with college entrance examination such as relevance to school college entrance examination are excluded from analysis model because its impact in elementary school seems comparatively less than higher middle or middle school.

First, class size often is put on as an easy representative statistic to monitor a measure of educational quality. Some teachers and parents presume that students will learn more in smaller classes because of increased opportunities to receive individualized instruction from teacher (Chingos, 2013: 413). Many researches have demonstrated that smaller classes increase educational performance including attending college, college choice, and degree completion(Dynarski, Hyman, and Schanzenbach, 2013). The following hypothesis guides our empirical investigation.

Hypothesis 3.1: The smaller class size is, the higher performance is.

Yet, a large body of research on the relationship between class size and student learning show that the number of high-quality studies is disappointingly small and does not offer guidance as to the optimal class size overall, much less for specific grades, subjects, or populations(Chingos, 2013: 412).

Second, school districts occupy central role in education reform in many OECD countries (Whitehurst, Chingos, and Gallaher, 2013). They manage nearly all public funding and are frequently the locus of federal and state reform initiatives. Whitehurst, Chingos, and Gallaher (2013) found there are differences among the academic achievement of demographically similar students in higher and lower performing districts.

Whether the Superintendent of an Office of Education is under ruling party or not could have impact on policy performance because CE policy was led by the Ministry of Education as a presidential promise project. The following hypothesis is proposed. Yet, the impact of school district on performance could not be large in Korea. Central government has played a central role in education in Korea (Sorensen, 1994; Seth, 2002). By law (Korea's Local Education Autonomy Act) MOE has many authorities to control most works of school districts.

Hypothesis 3.2: A teacher under an Office of Education where the Superintendent is under ruling party has higher performance than a teacher under an Office of Education where the Superintendent is not.

Third client characteristics may mitigate or increase policy performance (Ewalt and Jennings, 2004: 451). In many policy arenas, support from key stakeholders is critical for effective policy implementation (Imperial, 2005). Key stakeholders have strong impact on street level bureaucrat's behavior and working (Kim and Cho, 2015). Parents are the clients of CEP and could be deeply associated with performance. Teachers are expected to consider parents in their implementation of CEP. Parents' characteristics may have four to eight times the impact on student achievement compared with teacher (Whitehurst, Chingos, and Gallaher, 2013). The following hypothesis is proposed. The conceptual framework for education policy's performance is as follows (Figure 1).

Hypothesis 3.3: The higher parent support CE in school, the higher teachers' implementation performance of CE is.

Research Design and Measurement

Data

I conducted a cross-sectional regression analysis of teacher's implementation of CEP in 2012, the third year since its initiation. In addition to statistical analysis, I conducted a series of in-depth interviews with teachers, principals and policy-makers before statistical modelling. The total number of interviewees was 10 and each was affiliated with different organizations related to the school management: 4 were teachers in elementary schools, 2 were principals in elementary schools, and 4 were education officers in the MOE or local education office. The knowledge attained via interviews was used for detecting possible omitted variables and also considered in the conceptualization and operationalization of variables. I also utilized the interviews in the interpretation of the results of statistical testing. Basic summary statistics for the variables is as follows (Table 1).

Table 1. Summary statistics

	N	Mean	S. D.	Min	Max
Use of CE teaching methods in class (%)	213	24.5399	6.65416	1.00	35.00
Comprehensive assessment of student performance (%)	209	61.2823	25.67496	.00	100.00
Increasing student's creativity	219	2.7626	.58126	2.00	4.00
CE model school grant (dummy)	219	.4110	.49413	.00	1.00
Textbook properness to CE	219	2.5890	.66710	1.00	4.00
School management effectual with CE	219	3.0913	.66420	1.00	4.00
Teacher expertise for CE	219	2.5114	.62340	1.00	4.00
Class size (student number)	213	33.1887	6.41514	1.00	35.00
Parental support for CE	219	2.7443	.77127	1.00	4.00
School district trait(whether the Superintendent of an Office of Education is under leading party dummy)	219	.4566	.49926	.00	1.00

I used a survey data, a combination of recognition data (7questions) and objective data (3 questions). The survey data is drawn from a nation-wide sample of teachers who are responsible for CEP. The survey was send to each teacher and the answers to the survey were

collected by Korean Educational Development Institute (KEDI) which is a leading institution in Korea in the field of educational policy research and planning.⁴ 219 teachers were selected randomly from elementary schools within a stratification grid defined by three variables: regional location, school district, and whether antecedent policy tools per school existed or not.

The response rate was 100%, as all teachers to whom questionnaires were sent returned them. Teacher surveys are often used as evidence in the analysis and evaluation of education policy implementation and performance because teachers are themselves evaluators as well as a street level bureaucrat with the most knowledge about the implementation context (Favero and Meier, 2013).

In the survey, teachers reported performance such as use of CE teaching methods in class, comprehensive assessment of student performance, and increasing student's creativity. Also, teachers reported whether their schools get CE Model School grant or not and whether textbook is proper to CE or not. Teachers rated the extent of school management effectual with CE, the extent of their CE expertise, and the extent of parents' support for CE. Questions were answered on a 4-point Likert scale ranging from low to high.

Concepts and Measures

Meier and O'Toole(2013: 446) offers to avoid the use of administrators' self-perceptions of performance as a dependent variable. In this research, I use data-based measures as a dependent variable and they are more specific and less likely to generate spurious results.

While it is unclear what creativity exactly is (BAI, 2013; Craft, 2003; Gibson, 2005), the announced goals of CEP are clear. CEP in Korea focuses on reducing cramming-style

⁴ The BAI audited CEP performance in 2012. The survey in this research was developed to find street level facts by the author and part of survey results were cited in BAI's audit report (BAI 2013).

education in favour of different teaching methods and comprehensive student assessments. Performance variables are based on use of CE teaching methods in class, comprehensive assessment of student performance, and increasing student's creativity. Three aspects of the instructional program can be influenced directly by CEP tools.

“Use of CE teaching methods in class” is the extent to which teaching methods for cultivating student creativity are used in the classroom. The scale ranges from 0 to 100. “Comprehensive assessment of student performance” is measured as the rate of essay-type questions (long answers) scores and creative experiences activity scores of total score. The scale ranges from 0 to 100. Higher scores indicate that policy is implemented in line with CE goals. As such, the index indicates the extent to which teachers carry out the policies asked to be implemented. This choice of dependent variable is consistent with the broader shift in implementation research from studying outcomes to studying the behaviour of implementers (May and Winter, 2007; Winter, 1986). The remaining entries in Table 1 fit into the three categories of potential influences that prior researches suggest are important to consider. These are summarized including policy tools; street level administration; and implementation conditions variables.

CE model school dummy measures whether the school is given the CE Model School grant or not. CE Model School grant tool is measured by dummy variables because the supported grant size is almost the same among schools. In the few cases that the amounts are different among schools, the amount is uniformly decided depending on the size of the school. The textbook properness to CE variable captures the extent of textbook amount is effectual with CE.

School management effectual with CE is measured by the extent that school is managed appropriately to nurture pupil creativity. Teacher expertise measures a teacher's self-assessment of their own expertise level in CE teaching methods. Class size measures the

number of students in the respondent teacher's class. School district trait is measured by a dummy variable whether the Superintendent of an Office of Education is under leading party. Parental support for CE is measured as the extent parent support CE.

Findings

The results of OLS are as follows (Table 2). I estimate the effect of the variables associated with policy tools, street level administration, and implementation conditions on performance. Higher scores on the dependent variable indicate greater performance aimed at cultivating student's creativity. Three all models provide statistically meaningful levels of fit (p values < .000).

Teachers' expertise for CE is related to using of CE teaching methods in class ($b=.303$) and increasing student's creativity ($b=.483$). This result is consistent with the results of most research that teachers among school-related variables matter most (RAND, 2014). Also school Management effectual with CE influences comprehensive assessment of student performance ($b=.213$). This results imply that street level administration have some impact on performance in policy types like education policy where street level bureaucrat' role matters.

The impact of school management effectual with CE on comprehensive assessment performance is consistent with Whitehurst, Chingos, and Gallaher's (2013) study, which used 10 years of data collected from all public schools in Florida and North Carolina.

Table 2. Explaining Creative Education Policy Performance

	Model 1	Model 2	Model 3
Dependent Variables	Use of CE teaching methods in class	Comprehensive assessment of student performance	Increasing student's creativity

Explanatory Variables			
Policy Tools			
CE Model school grant	-.036 (-.498)	-.108(-1.459)	.003(.048)
Textbook properness to CE regulation	-.106 (-1.400)	.101(1.296)	.128(1.967)
Street level administration			
School Management effectual with CE	.116(1.499)	.213**(2.744)	.101(1.536)
Teacher expertise for CE	.303*** (4.198)	.064 (.873)	.483***(7.766)
Implementation conditions			
Class size	.037(.517)	.117(1.609)	-.007(-.119)
Parental support for CE	.076(.927)	.053(.638)	.082(1.161)
School district trait	-.023(-.327)	.051(.725)	-.099(-1.649)
Model Statistics			
<i>F</i>	4.148	4.378	16.471
<i>p-Value</i>	.000	.000	.000
Number of cases	211	205	213
Adjusted R ²	.095	.104	.323

Note: Figures in parenthesis are standard errors. *p < .05; **p < .01; ***p < .001

It is found that while neither CE Model School grants nor textbook properness to CE regulation has statistically significant relationship with performance in all three models both variables in street level administration have statistically significant and positive relationship with performance. Generally regulation and grant most often have been used and their positive impact on policy performance has been hypothesized. Yet there are so many reasons regulation or grant fails. For Korean CE policy, the reason of ineffectiveness of CE model school grants seems that this way is top-down and not continuous according to the results of interviews with teachers and principals. For the U.K., while policy makers have introduced a number of grant programs to encourage creativity in education, there were difficulties in implementation because of a relatively low level of development of the teaching methods, goal conflicts among programs and tensions in school management changes (Nicholl and McLellan, 2008: 588).⁵

Hypothesis 3 concerns the influence of implementation conditions variables such as class size, school district, and parental support for CE on performance. Class size is not

⁵ The U.K. performativity policies based on New Public Management philosophy has been central to the government's agenda and include monitoring mechanisms such as Office for Standards in Education (OSE) inspections, performance management, and school league tables, all of which are used to measure the value of a school or individual teacher (Ball, 2003: 216; Nicholl and McLellan, 2008: 586).

statistically significant in this research. This result is consistent with Hanushek (2003)'s findings that 80 percent of 276 estimates of class-size effects from 59 studies is not statistically distinguishable from zero. Similarly, Hoxby (2000) found no relationship between class size and achievement among fourth and sixth graders. In Korea, class size reduction has been one of the key indices of school improvement until early 2004. By continuing investment in education, the pupil-class ratio has decreased from 59.9 in 1980 to 35.5 in 2010 in higher middle school (K10-12 in the U.S.). In this research, the mean class size measured by pupil-class ratio is 33.

It is found that school district measured by a dummy variable whether the Superintendent of an Office of Education is under leading party has no effect on the performance. This result implies that the office of education is not doing so even though it has to play a lot of role as a supporter in the achievement of creative education policy. In the future, the office of education will need to strengthen its role in order to improve the performance of its policies and to support schools and teachers.

Lastly it is found that parental support for CE isn't significantly related to three all performance variables in elementary school. These results imply that parents' role in school activities and performance is still insufficient.

Conclusions

This research aims to develop a theory governing the specification of model variables and analyze policy performance. I examined the effect of variables with theoretically and practically some argue in each sector of policy tools, street level administration and implementation condition on performance of CE policy using regression analysis with data from secondary administration data and survey of 219 elementary school teachers in Korea. In addition to statistical analysis, I also interviewed 20 employees with experience related to the

implementation in CEP to find out the relationship among variables and extract valid measurements for each variable. The points which should be noted in this research are the followings The following points should be noted.

First, street level bureaucrat expertise and school management, both variables in street level administration, should be dealt with the most importantly for policy success as least in the field of education policy. As Lipsky (1980) argued, intended goals of policy can result in failure or unintended results without considering street level administration. Second the empirical findings in this research that neither grants nor regulation could have significant impact on performance highlights to the necessity of caution in the choice and the design of policy tools.

Third, implementation conditions should be deeply considered in policy design and implementation. The model in this research is still requires improvement for future administration and policy studies. Particularly, theoretical property of grants or regulations and the reason of their different impact on performance are required to be clearer. Why does a grant, one of the most often used policy tools for stimulating some sort of activity in many policy areas, have no impact on performance? Why does regulation, also one of the popular tools with grant, have different impact on performance different from the traits? Analyses of the U.K. education reform may give an idea. Craft (2003) pointed out that education reform implementation in the U.K., which has tightened the control of teachers as well as the management and financing of schools, has resulted in greater controls of teachers to the failure of policy.

Also a better measure of some variables including performance is needed. The measurement of several independent variables such as the extent of teacher's expertise used in this study is based on a teacher's response to the survey. While teachers are responsible for

implementation as a street level bureaucrat and have intimate knowledge of policy context, there could be a gap between other stakeholders' perception.

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