Examining Factors Affecting Student-Centered Instruction: Focusing on School Organizational Features[a]

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Abstract

This study examines factors affecting student-centered instruction focusing on school organizational features. More specifically, we look at organizational features of a school type (Hyukshin school), an open school climate, and teachers' decision-making authority in curriculum development and student management. The study uses data from the Gyeonggi Education Panel Study (GEPS), and samples 1,277 teachers at 159 middle schools in the Republic of Korea. The results show a positive relationship between the teachers' use of student-centered instruction and the Hyukshin School, while an open school climate and the teachers' decision-making authority in curriculum development and student management were not associated with the use of teachers' student-centered instruction. The implications and limitations of the study are also discussed.

Keywords: Student-centered instruction, school reform, school organizational characteristic, Hyukshin school, hierarchical linear modeling

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Introduction

The Republic of Korea (hereafter Korea) has been recognized for outstanding performance in international assessments such as Trends in International Mathematics and Science Study and Programme for International Student Assessment (OECD, 2014), however, despite these impressive academic achievements, several problems with Korean education still remain unsolved. As has been pointed out by a number of researchers in Korea, the most pressing of these include the predominance of teacher-centered and didactic pedagogy, low motivation, and the low interest of students (Sung et al., 2016).

In addition to these existing problems, Korea's public education is currently faced with two new challenges: the marginalization of underachievers in schools and the failure of traditional schools in adapting to the Fourth Industrial Revolution—the emergence of technology. Firstly, the proportion of underachievers has increased according to the National Assessment of Educational Achievement, the ratio of underachievers is positively correlated with the ratio of social assistance recipients in schools (KICE, 2017). Secondly, Korea already lags behind the rest of the developed world in regard to education relevant to the Fourth Industrial Revolution (So, 2016). With the emergence of artificial intelligence (AI), the ability to simply memorize information and make simple calculations will become increasingly obsolete as a core component of work place competitiveness. Jobs of the future will demand creativity and well-developed problem-solving ability. For schools, it is imperative that both the cognitive and affective domains of learning be considered as important educational goals, in order to effectively nurture individuals.

Student-centered education has been offered as a model approach for countering related classroom challenges because of its effectiveness in meeting the diverse needs mentioned (Altan & Trombly, 2001). One of its key merits is that it is flexible enough to accommodate individual differences in learners' backgrounds, interests, abilities, and experiences (McCombs & Whistler, 1997). Student-centered education has been shown to positively affect students' cognitive domains such as academic outcomes (Cornelius-White, 2007). In particular, it has been effective in boosting the academic achievements of low-performing students (Baek & Park, 2015). Furthermore, student-centered education also has a positive impact on students' affective traits such as motivation and self-efficacy (Hall & Saunders, 1997; McCombs, Daniels, & Perry, 2008).

Despite long-standing establishment, change to instructional methods are needed to solidify the growing consensus around student-centeredness as an effective form of pedagogy (Brown, 2003, Kim, Kang, Kuusinen, & Park, 2017). Although abundant research has been conducted on the positive influence of student-centered education on students' cognitive and affective traits, there is little research to show which elements in specific promote the effective use of student-centered instruction in the classroom. Some research has focused on the 'individual teacher', looking at the characteristics of teachers who make more use of SCI (Kang & Kim, 2015; Kim et al., 2017; Mangno & Sembrano, 2007). This approach, however, may place an unreasonable expectation on those 'individual teachers' to be responsible for institutional changes in teaching methods. Additionally, it leaves little room for government policy to improve the situation.

Unlike previous reform models that have focused primarily on expanding an individual's

repertoire of classroom practices to affect instructional change, the Gyeonggido Office of Education (GOE) has introduced a new school type, the 'Hyukshin school', and has attempted to improve the current situation in schools by addressing excessive bureaucracy, high competitiveness, poor communication between school staff, improving active cooperation, and developing a vibrant institutional democracy—all with the aim of promoting student-centered education (Sung et al., 2016). Drawing on these principles, rather than only focusing on individuals, the present research aims to shed light on the organizational features of a school that promote the use of student-centered instruction at a more comprehensive level. This study aims to explore the relationship between the ways teachers actually educate students in actual classes, the individual teacher's characteristics, and school organizational characteristics, and to consider the relative strength of effects across variables.

Theoretical background

Teachers' individual factors affecting teachers' instruction

Several studies have investigated factors affecting teachers' instruction methods at an individual level. They can broadly be placed into two groups. The first group look at demographic factors such as gender, major, age, and teaching experience (Kim et al., 2017; Lee & Yu, 2017; Liu, Qiao, & Liu, 2006; Seevers & Clark, 1993). Overall, the research on demographic factors has not provided consistent results. For example, Liu et al. (2006) found that level of education, gender, and age do not affect an instructors' teaching style. Seevers and Clark (1993) also show that level of education, gender, age, professional position, and years of teaching experience are not related to teaching methods. That said, while Lee and Yu (2017) also found gender to be not significant, they did find that teaching experience has a positive effect on teaching performance. With regard to student-centered instruction, Kim et al. (2017) found that level of education had a positive effect, and years of teaching had a negative effect.

Second group of studies focuses on teachers' psychological characteristics such as teaching efficacy and professional experience. Teaching efficacy and belief have a positive effect on encouraging teachers to adopt student-centered education practices (Kang & Kim, 2015; Kim et al., 2017; Mangno & Sembrano, 2007). Professional experience, such as participation in professional development activities, improves teaching performance (Kim, Lee, & Byeon, 2018; Kim et al., 2017). Kim et al. (2017) argue that informal collaboration between teachers within the school helps to facilitate a shift from traditional to student-centered instruction.

Schools' organizational factors affecting teachers' instruction

A few studies have examined the influence of a school's organizational characteristics on instructional changes. Several of the background features of a school have been studied, including school size, location, and school socio-economic status. Park (2018) found that a smaller school and classroom size helps to orient teachers' towards student-centered instruction. Kim et al. (2017) found that location and the number of teachers in a school have an impact on teachers' use of student-centered instruction, while school size and rural level—which is related to school SES—have no relationship to the use of SCI.

Other organizational features that have been researched, include the Hyukshin school model, teachers' autonomy, and school social climate. For instance, Sung and colleagues (2016) argued that the Hyukshin school's new vision and collaborative school climate enable teachers to sustain pedagogical changes. Prior qualitative research also found instructional changes in Hyukshin school classes (Chang & Kim, 2011; Yoo, Yoo, Kim, & Kwon, 2016). One of the most important factors in improving school practices is the autonomy of teachers (Ahn, 2017; Noh, 2015; Pearson & Moomaw, 2006; Rowan & Miller, 2007). Ahn's (2017) research established that teacher autonomy and collaboration between teachers is related to the improvement of teaching methods. Noh (2015) also showed that enhancement of teachers' autonomy positively affects instructional innovation. Furthermore, a sustainable and positive school social climate affects the behaviors and feelings of staff, creating an atmosphere that enables the redefinition of educational innovations (Chang & Kim, 2011; McCombs & Whisler, 1997; Yoon, 2016). More specifically, the school climate can indirectly affect instructional change as it is positively related to teachers' job satisfaction, commitment, and loyalty—key bases for school reform (Halpin, 1966; Kalis, 1980; Newmann & Wehlage, 1995).

Methodology

Data sources and sample

This study used a subset of the data from the 2016 Gyeonggi Education Panel Study (GEPS) that looks at second grade middle school teachers. The GEPS data was initially collected in October, 2012 (Sung, Kim, Park, & Min, 2012). At this point, 123,454 students were enrolled in the fourth grade of elementary school in Gyeonggi Province, Korea, and, of these, 3,541 student-samples were constructed for GEPS. From 2012 onwards, GEPS data was collected from the same students annually. In addition to the student data, teacher and school data was also collected annually. In the fourth year of the study (2015), 2,773 first graders in middle school were additionally sampled to enable school-level. The GEPS data is suitable for examining the relationship between the organizational characteristics of a school and student-centered instruction, because it contains a diverse number of the schools'

organizational characteristics, including Hyunkshin school implementation, the school climate, and the decision-making authority of teachers. It's worth noting that Gyeoggi Province has taken an initiating role in implementing school reform in Korea. In sum, the data comprised 1,583 teachers from 196 middle schools, which, after using list-wise deletion to remove missing data, resulted in a sample of 1,277 teachers from 159 middle schools.

Measures

Dependent variable: Student-centered instruction (SCI)

The dependent variable, student-centered instruction, was measured as the average of 9 items (Cronbach's alpha= .898). Responses were measure on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). To give an example, one of the questions asking teachers about SCI was, "I guide students to draw conclusions from each other on a given topic." Items from all measures are presented in the Appendix.

Teacher-level variables

The demographic variables, gender, years of teaching, level of education, position, self-efficacy, and collaboration were considered as control variables as they might influence teachers' instruction methods. Gender was coded as 1 for female and 0 for male. Having a bachelor's degree was coded as 0, with 1 for a master's or Ph.D. degree. Years of teaching was coded as 1 for less than 5 years, 2 for 5 to 9 years, 3 for 10 to 19 years, 4 for 20 to 29 years, and 5 for 30 years or more. A head teacher was coded as 1 with other teachers as 0. Teachers' self-efficacy (Cronbach's alpha=.876) was measured as a composite of nine items. Collaboration (Cronbach's alpha=.624) was measured as a composite of two items: how often teachers discuss the students' academic issues and how often they discuss students' attitudes or behavior with their colleagues.

School-level variables

We used school size and school socio-economic status (SES) as the control variables. School size was measured by the total number of teachers in the school, and school SES was measured by the percentage of students in school receiving social assistance from the government. We included school type, open school climate, and teachers' decision-making authority as school organizational characteristics. In measuring school type, Hyukshin schools were coded as 1 with other schools as 0. Open school climate (Cronbach's alpha=.937) was measured as the average of eight items. As before, responses fell on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). As an example, one of the questions asking teachers about open school climate was, "A school encourages teachers to come up with fresh ideas regardless of positions or career." Items from all measures are presented in the Appendix.

In addition, we created two variables related to teachers' decision-making authority: one was about the curriculum, and the other about student management. Decision-making authority in curriculum development (Cronbach's alpha=.858) was measured as the average of six items on how teachers' opinions at school are reflected in the following: 1) establishment of school goals, 2) selection and operation of teaching materials, 3) organization and operation of educational activities other than formal curriculum, 4) selection of teaching tools, 5) decisions on how to operate classes, and 6) curriculum organization. Decision-making authority in student management (Cronbach's alpha=.860) was measured as the average of two items on how teachers' opinions are reflected in 1) type and degree of student punishment, and 2) establishment and amendment of school rules. The response scale for both types of decision-making related authority ranged from 1 (never) to 5 (a great deal).

Descriptive statistics

The mean score of SCI as a dependent variable was 3.76 (SD=.64). 79% of teachers were female, and, on average, teachers had about 12 years of teaching experience. 63% of teachers had a bachelor's degree as their highest level of education, and 14% of teachers were head teachers. The mean rating of a teacher's self-efficacy was 4.16 (SD=.44) and on average, teachers discuss students' academic issues or students' attitudes or behavior with their colleagues for about two hours per week. Regarding school background variables, there were 47 teachers per school on average and 2.82% of students in schools received social assistance. With regard to school organizational characteristics, 25% of schools were Hyukshin schools. The mean of school climate was 3.64 (SD=.44). In terms of decision-making authority, the mean of teachers' decision-making authority on curriculum was 3.67 (SD=.34) and the mean on student management was 3.47 (SD=.41). Despite reducing the sample size from 1,583 to 1,277 teachers due to missing data, as can be seen in Table 1, there was no difference in in the descriptive statistics of either teacher or school variables between the full and analyzed samples.

Table 1. Descriptive statistics of teachers and schools

	Full Sample		Analytic Sample	
	Mean	*SD*	*Mean*	*SD*
Level 1 – Teachers	N= 1,583		N= 1,277	
Student-centered instruction	3.78	.64	3.76	.64
Female	.79	.41	.79	.41
Years of teaching	2.62	1.08	2.63	1.07
Highest level of education	.36	.48	.37	.48
Position	.14	.35	.14	.35
Self-efficacy	4.16	.44	4.15	.44
Collaboration	2.54	1.18	2.53	1.18

Level 2 – Schools	N = 196		N = 159	
Number of teachers in a School	46.57	15.90	46.72	16.22
School SES	2.82	4.30	2.82	4.31
Hyukshin School	0.28	.45	.25	.44
Open school climate	3.64	.43	3.64	.44
Decision-making authority _Curriculum (Aggregate)	3.67	.35	3.67	.34
Decision-making authority _Student management (Aggregate)	3.47	.42	3.47	.41

Statistical models

Due to the nested structure of the data, we employed a two-level hierarchical linear model (Raudenbush & Bryk, 2002). To explore the relationship between school organizational characteristics and teacher's use of student-centered instruction, we created three separate models: model 1, a null model without any variables; model 2, which includes teacher variables as level-1 predictors; and model 3, which includes both teacher variables as level-1 predictors and school background variables and school organizational characteristics as level-2 predictors. All continuous independent variables and the dependent variable were standardized (mean=0, standard deviation=1). In addition, all of the predictors, at level 1 and level 2, were grand-mean centered.

To explain the variation in SCI scores, we use gender, years of teaching, and highest level of education, position, self-efficacy, and collaboration. The formula for a hierarchical linear model (HLM) at level 1 (model 2) is written as

$$Y_{ij} = \beta_{0j} + \beta_{1j}(Female) + \beta_{2j}(Experience) + \beta_{3j}(Degree) + \beta_{4j}(Position) + \beta_{5j}(Efficacy) + \beta_{6j}(Collaboration) + \gamma_{ij}$$

where the SCI score for teacher I in school j, Y_{ij} is regressed on gender, teaching years, highest level of education, position, self-efficacy, and collaboration. The term γ_{ij} refers to the variance unexplained after controlling for these teacher- level predictors.

A HLM model at level 2 (model 3) is written as

$$\beta_{0j} = \gamma_{00} + \mu_{0j}$$

where β_{0j} is the mean SCI score of teachers in school j, γ_{00} is teachers' overall mean SCI score, and μ_{0j} is a school-level random error term.

To examine the relationship between school organizational characteristics and school mean SCI scores, we included school background variables and school organizational characteristics, getting the formula

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(Size) + \gamma_{02}(SES) + \gamma_{03}(HYUKSHIN) + \gamma_{04}(Opne\ Climate) + \gamma_{05}(Decision\_curriculum) + \gamma_{06}(Decision\_student\ managemaent) + \mu_{0j}$$

$$\beta_{1j} = \gamma_{10},\ \beta_{2j} = \gamma_{20},\ \beta_{3j} = \gamma_{30},\ \beta_{4j} = \gamma_{40},\ \beta_{5j} = \gamma_{50},\ \beta_{6j} = \gamma_{60},$$

where the mean SCI of teachers in school j, β_{0j}, is regressed on school size, school SES, school type, school climate, and teachers' decision-making authority on curriculum and student management. The term μ_{0j} is the variance unexplained after controlling for level-2 predictors.

Results

Before we analyzed the model results, we calculated the teacher variance and school variance in SCI. The result of Model 1 indicated that the variance between teachers was .95725 and the variance between schools was .06562. In other words, out of the total variance, the variance between schools was 6.42 % and the variance between teachers was 93.58% which means there was considerable variation among teachers and there was some variation among schools.

Model 2 contains variables reflecting teacher characteristics including gender, years of teaching years, and highest educational degree, position, self-efficacy, and collaboration. The results of Model 2 show that female teachers tended to use SCI more than male teachers (p<.05). A teacher's number of years of teaching was negatively associated with the teacher's use of SCI (p<.05). Moreover, teaching efficacy was positively related to the teacher's use of SCI (p<.001). Teacher collaboration was also positively associated with the teacher's use of SCI (p<.001). The size of the coefficients for self-efficacy was more than three times greater than the coefficient for their collaboration. The variance between schools in SCI was statistically significant at .032. Compared to Model 1, Model 2, including teacher variables, explains 20 percent of the variation in SCI scores among teachers, and it explains 52 percent of the variation in SCI scores among schools.

Model 3, the fully specified model, explores how school organizational characteristics are related to teachers' use of SCI while controlling for teacher variables. In terms of school organizational characteristics, one variable was a significant predictors of teachers' use of SCI. Specifically, teachers working at a Hyukshin school tended to use SCI more than teachers working at other schools (p<.01). Additionally, an open school climate was positively related to teachers' use of SCI (p<.05).

The size of the coefficients for school type (Hyukshin school) was the larger than for gender and position, which were statistically significant variables at level-1. However, in terms of the other school variables—including number of teachers in a school, school SES, teachers' decision-making authority on curriculum and student management, and open school climate—neither gender nor position were associated with teachers' use of SCI. The variance between schools in SCI was .019 and it was statistically significant. Model 3, including school organizational characteristics, explains 40 percent of the variation in SCI scores among schools. That is, compared to Model 2, a considerable additional amount of variation in SCI scores among schools is explained.

Table 2. Hierarchical linear model predicting student-centered instruction

	Model 1		Model 2		Model 3	
	Coefficient	*SE*	Coefficient	*SE*	Coefficient	*SE*
Intercept	-.032	.035	-.029	.029	-.030	.028
Level 1- teachers (N= 1,277)						
Female			.149 *	.066	.143 *	.066
Highest degree			.085	.053	.073	.052
Teaching years			-.070 *	.028	-.066 *	.027
Position			.082	.081	.082	.080
Self-efficacy			.430 ***	.026	.423 ***	.027
Collaboration			.130 ***	.027	.123 ***	.026
Level 2 - schools (N=159)						
Number of Teachers in a school (Standardized)					.015	.027
school SES (Standardized)					-.015	.019
HYUKSHIN					.191 **	.069
Decision making authority_curriculum (Standardized)					.048	.059
Decision making authority_student management (Standardized)					-.074	.048
Open school climate (Standardized)					.073	.047

	Estimate	Proportion Explained (%)	Estimate	Proportion Explained (%)	Estimate	Proportion Explained (%)
Level 1 variance	.957	…	.765	20.11	.766	19.99
Level 2 variance	.066	…	.032	51.69	.019	71.08
d.f.	158		158		152	
χ^2	241.661***		208.464**		182.398*	

* $p<.05$, ** $p<.01$, *** $p<.001$

Conclusion and discussion

The purpose of this study is to examine the relationship between school organizational features and teachers' use of student-centered instruction. Much of the current research focuses more strongly on teachers' individual features than on educational structures and organization to promote instructional change. However, this approach has the drawbacks of putting too much pressure on individual teachers, and of not allowing a place for government intervention in school reform. Therefore, we argue that there is a need to examine the effectiveness of the organizational features which facilitate bringing new pedagogies into practice. The following are implications that can be drawn from the results of this study.

First, the results show that among the school organizational features, only the Hyukshin school method has a positive relationship with teachers' use of student-centered instruction. It seems that the concrete teaching philosophy in Hyukshin schools worked as a mediating factor of overall school change. Beyond simply conveying knowledge to students and raising their standardized-test scores, Hyukshin schools have established an articulated philosophy of teaching, which aims to instill democratic values, to foster authentic achievement for all students, and to offer diverse and specialized curricula (Baek & Park, 2015). Along with the Hyukshin approach, collaboration among teachers may also play a direct and critical role in changing teachers' approaches to instruction. For example, teachers in the Hykshin schools mentioned that a shared vision for the school and a collaborative school climate enabled them to sustain pedagogical changes (Chang & Kim, 2011; Kang, 2015; Sung et al., 2016).

Second, we did not find a significant relationship between decision-making authority and the use of student-centered instruction in the study. This result contradicts previous research arguing that the enhancement of teachers' autonomy positively affects instruction innovation (Ahn, 2017; Noh, 2015). However, there is a need to investigate autonomy more deeply. The concept of autonomy is complex and multifaceted—each associated with an element of school organization such as leadership, personnel, or involvement with local communities—making it difficult to see its effects (Chubb, 1998). It is therefore vitally important for future research to examine more closely the way autonomy works in schools, and to find ways to maximize its positive effects.

Third, the results showed that the use of student-centered instruction is not related to school social climate. This finding also contradicts previous research, which argued that a positive, sustainable school climate affects the behaviors and feelings which help to facilitate educational innovations (Chang & Kim, 2011; McCombs & Whisler, 1997; Yoon, 2016). While the school climate scale used in GEPS measures willingness to change, it is possible that the measurement did not capture other aspects of school climate. Additionally, the result may indicate that government need to more actively share pedagogical innovations with all schools and teachers, and increase support for them to enable changes in schools to properly take hold. Teachers and principals may not yet be fully aware of new shifts in direction, or their desire to change may not be actionable due to a shortage of resources.

The overall results emphasize the importance of education policy-makers further

promoting student-centered instruction. It is of note that our finding provide empirical evidence from quantitative data, showing the positive impact of the Hyukshin school method on teachers' use of student-centered instruction. While the teaching methods reform focused a great deal of attention on educators and policy makers, empirical studies providing evidence supporting the shift in pedagogical practices is still lacking. Some studies, drawing on qualitative methods, have argued that changes in organizational features in schools will promote change to instruction methods that the changes of organizational features have positive effects on instructional changes (e.g. Sung et al., 2016; Yoon, 2016), however, the results of these studies cannot be generalized to a broader population with the same degree of certainty that quantitative analyses can (Atieno, 2009).

Another point worth noting is that the results of this study speak to the importance of implementing a bottom-up approach to further promote student-centered instruction. Recent top-down policies, instigated by a centralized government, do not seem to have affected systematic change to classrooms. Rather, they have focused on individual teachers via training courses or monetary support, and there is a limit to the effect that individual teachers can have on instructional changes while colleagues continue to teach in the same ways. By contrast, Hyukshin schools have initiated bottom-up changes by rebuilding schools into democratic spaces filled with dignity and care (Sung et al., 2016). Many successful cases of changing pedagogical practices exist. In order for education reform to bear fruit, bottom-up changes, based on institution-wide enthusiasm and commitment, are essential for changing teachers' pedagogical practices and ultimately improving the quality of students' development and growth (Hargreaves, 1994).

A concern with closing the achievement gap and cultivating talented students in the Fourth Industrial Era is not only a domestic issue; it is a global one. Recent educational reform movements around the world have called for teachers to embrace student-centered learning, to develop the skills and competences of each learner, rather than focus on a mere accumulation of knowledge (Brinkmann, 2015). Student-centered instruction has emerged as a key pedagogical focal point for policy makers looking to affect change in both cognitive and affective domains; in this context, our study looks to for broad implications that can be used to reform teaching methods and improve the quality of classes.

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Appendix. Description of variables

Variables	Items
Teacher Variables	
Learner-Centered Instruction (Cronbach alpha=.898)	Average scores of 9 items: To what extent do you agree with the following statement about content and methods used in your class: 1) I guide students to draw conclusions from each other on a given topic. 2) I encourage students to agree with or criticize the opinion when they make their opinion. 3) I help students find their own goals. 4) I help students solve problems on their own. 5) I encourage students to exchange their opinions on the learning content. 6) I help students collect and investigate materials themselves to solve problems. 7) I help students to create small groups and solve learning assignments together. 8) I encourage students to share their roles and solve common problems. 9) I help students to help each other and solve common problems. (1) Strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree.
Gender	Male=0, Female=1
Years of teaching	Teaching Experience (years) ; lower 5 years =1, 5~9 =2, 10~19=3, 20~29=4, more than 30 years =5
Highest degree	Bachelor's degree=0, Master or Ph.D. degree=1
Position	Head teacher =1, Hourly, part-time or regular teacher = 0
Self-efficacy (Cronbach alpha=.876)	1) I can figure out what the problem is when students do not concentrate on my class. 2) My evaluation of students' academic ability is accurate. 3) I can adjust the teaching methods according to the subject content. 4) I can accurately figure out the students' degree of concern about the class. 5) I can analyze the reason why intelligent students do not have interest in studying. 6) I can analyze why students behave in a problematic way 7) I can fully utilize the characteristics of a student when teaching a life.

	8) I can judge whether I can lead by looking at a student who has a problem behavior. 9) I continue to care for the students whose home environment is in need. (1) Strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree.
Collaboration	Average scores of two items: How often do you discuss the following issues with your colleagues a week? 1) Concerns about students' academic issues 2) Students' attitudes or behavior in classes (1) Less than 1 hour, (2) 1 hour~ less than 2 hours, (3) 2 hours~ less than 3 hours, (4) 3 hours~ less than 4 hours, (5) 4 hours~ less than 5 hours, (6) more than 5 hours
School Variables	
School SES (Standardized)	Percentage of receiving a supplementary basic living allowance in school
Number of Teachers in a school (Standardized)	Total number of teachers in a school
HYUKSHIN	HYUKSHIN school =1, Else =0
Decision making authority_curriculum (Standardized) (Cronbach alpha=.858)	School average scores of 6 items: How much is teachers' opinion reflected in the following things at school ? 1) Setting School Goals 2) Selection and operation of teaching materials 3) Organization and operation of educational activities other than formal curriculum 4) Selection teaching tools 5) Decision on how to operate classes 6) Curriculum Organization (1) Never, (2) little, (3) somewhat, (4) much, (5) a great deal
Decision making authority_student management (Standardized) (Cronbach alpha=.860)	School average scores of 2 items : How much is teachers' opinion reflected in the following things at school ? 1) Type and degree of student punishment 2) Establishment and amendment of school rules (1) Never, (2) little, (3) somewhat, (4) much, (5) a great deal

Open school climate (Standardized) (Cronbach alpha=.937)	School average scores of 9 items : To what extent do you agree with the following statement about a school climate: 1) It is an atmosphere where teachers make individual mistakes and trial and error as learning opportunities. 2) A school encourages teachers to come up with fresh ideas regardless of position or career. 3) The criticism of the school principal's management on school management is natural. 4) Teachers' ideas are actively reflected in school operations. 5) Teachers actively work to improve schools in response to environmental changes. 6) A school attempts to break existing institutions or practices. 7) The principal is constantly creating new ideas. 8) Our school's new way of operating schools is settled through modifications. 9) Subject selection is guaranteed in our school. (1) Strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree.

Korean Abstract

학습자중심수업에 영향을 미치는 요인 분석: 학교 조직 요인을 중심으로

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본 연구의 목적은 경기종단연구 5차 년도 데이터를 활용하여 학교의 조직적 특성이 학습자 중심 수업에 미치는 효과를 분석하는 것이다. 학교의 조직적 특성에는 구체적으로 교사의 의사결정 권한(교육과정, 학생관리), 개방적 학교풍토와 혁신학교가 포함되었다. 경기도 중학교 159개교와 교사 1,277명의 자료가 분석에 사용되었으며 학교의 조직적 특성에 따라 교사의 학습자 중심 수업 활용도에 차이가 있는지를 분석하기 위해 다층분석을 실시하였다. 분석결과, 혁신학교에 재직하는 교사일수록 학습자 중심 수업을 더 적극적으로 활용하는 것으로 확인되었다. 교사의 의사결정 권한과 개방적 학교풍토는 통계적으로 유의한 영향을 미치지 않는 것으로 나타났다. 마지막으로 본 연구의 시사점과 한계점을 함께 제시하였다.

주요어: 학습자중심수업, 학교 혁신, 학교 조직적 특성, 혁신학교, 다층분석