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How Learner-Centered Teaching is associated with Teacher Self-Efficacy and Job Satisfaction: Analysis of Data from 31 Countries

Junghee Choi
Pennsylvania State University

Ju-Ho Lee
KDI School of Public Policy and Management

Booyuel Kim*
KDI School of Public Policy and Management

Abstract

The expansion of learner-centered teaching has been the focus of education policy makers and teachers throughout the world. While most of the attention has been given to how learner-centered teaching influences student outcomes, it is important to consider how teachers are associated with learner-centered teaching. Using data from the OECD TALIS database, this study analyzes how the use of learner-centered teaching is associated with teacher self-efficacy and job satisfaction. Controlling for a wide range of teacher and classroom characteristics, as well as country and school fixed effects, we find that learner-centered teaching has a significant and positive association with both teacher self-efficacy and job satisfaction.

Introduction

The expansion of learner-centered teaching (also known as student-centered learning or learner-centered education) has been the focus of education policy makers and teachers throughout the world (Schweisfurth, 2015). International organizations like the UNESCO have advocated for its use in enhancing the quality of education (UNESCO, 2008, 2009, 2013). In contrast to more traditional forms of teaching that are teacher-centered, where students put all of their focus on the teacher, learner-centered teaching emphasizes a more active role by students in the learning process and recognizes the importance of accounting for each student's unique needs, interests, and perspectives (Lambert & McCombs, 1998). It has been argued that learner-centered teaching is needed in order to help students develop a range of diverse skills, particularly those that are deemed to be important in the 21st century, such as cooperation, creativity, and critical thinking (Bell, 2010).

With regards to types of teaching, studies generally focus on the impact they have on student outcomes, particularly test scores (Bietenbeck, 2014; Lavy, 2011; Schwerdt & Wuppermann, 2011). However, it is universally recognized that the level of student performance is strongly associated with who their teachers are and how they teach. Learning involves a process of daily interactions between students and teachers, so when discussing educational practice and policy, the values and needs of teachers should be considered. Oftentimes, policy reforms in education have had limited impact due to negligence of the role and agency of teachers in pedagogy, treating them as consistent across contexts or malleable to change enforced by outside entities (Schweisfurth, 2015). Therefore, while the ultimate goal of teaching is to affect students in positive ways, it is important to understand how teaching practices are associated with teachers.

When it comes to measures pertaining to teachers, teacher self-efficacy and teacher job satisfaction have increasingly gained attention from researchers and policy makers (OECD 2014a). According to social cognitive theory, self-efficacy is the degree to which an individual believes in one's ability to complete a certain task (Bandura, 1986). In the context of education, teacher self-efficacy reflects the confidence that teachers have in themselves to teach students effectively and help them develop (Holzberger, Phillip & Kunter, 2013; Tschannen-Moran & Woolfolk Hoy, 2001). Experiences of success, encouragement from peers, and the general social environment are believed to be closely tied with teacher self-efficacy (Jeon, 2017). Job satisfaction refers to perceptions of fulfillment from work activities, or the degree to which individuals have positive or negative feelings about their jobs (Weiss, 2002). Teachers have reported that job satisfaction is gained from regular activities like teaching, helping students develop, as well as working with supportive colleagues in a supportive atmosphere (Cockburn & Haydn, 2004). Their job satisfaction has also been shown to be associated with the quality of student-teacher relations, teacher well-being, motivation, and commitment (Ingersoll, 2001; Skaalvik & Skaalvik, 2010).

Self-efficacy and job satisfaction are closely associated with the classroom experiences of teachers and students. Teaching constitutes the core activity in the classroom, and the type of teaching method used can greatly influence how students learn and the type of student-teacher interaction that is fostered. For example, compared to traditional teacher-centered teaching methods, learner-centered approaches are likely to encourage more active engagement by students (Barak & Asad, 2012). It can also promote relationships of mutual trust between students and teachers (Algan, Cahuc, & Schleifer, 2013). Such effects pertaining to student engagement and learning are likely to shape how teachers perceive their jobs as teachers, and this perception plays a decisive role in determining their levels of self-efficacy and job satisfaction.

Existing studies on teacher-level measures have tended to be single-country case studies (Klassen et al., 2009). In contrast, our study uses data from an international survey of middle school teachers to see how the use of learner-centered teaching practices vary across countries, and analyze how they are associated with teacher self-efficacy and job-satisfaction. Given that the two measures have been shown to play important roles in overall teacher performance and educational experience by students, understanding how they are associated with learner-centered teaching practices has important implications for both policy makers and practitioners.

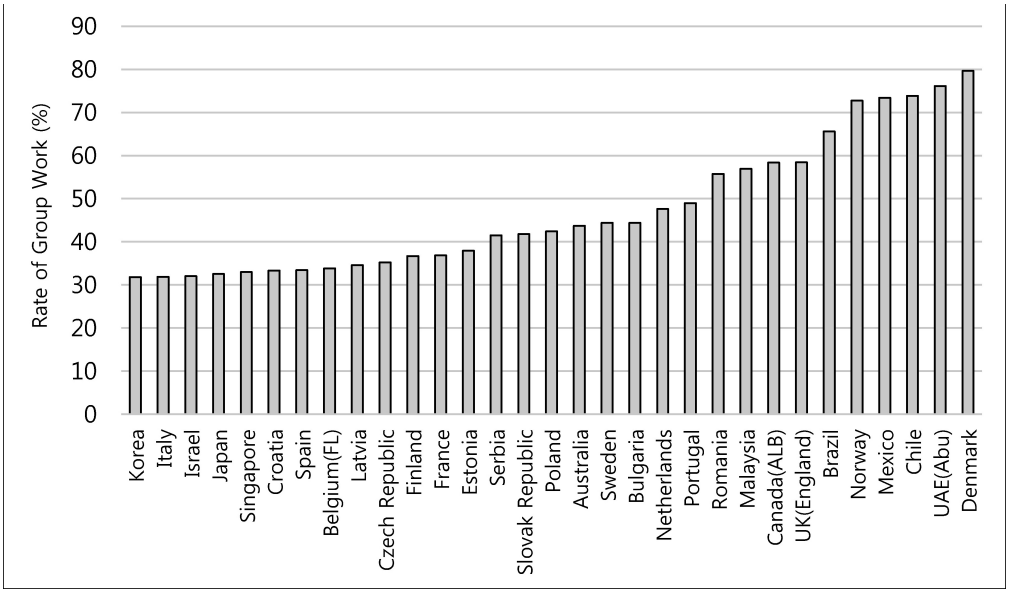
Data and Methods

To assess the association that learner-centered teaching practices have with teacher self-efficacy and job satisfaction, we use the TALIS database to examine the share of teachers who engage in learner-centered teaching in schools. TALIS is an international survey of teachers and principals in middle schools,[1] developed by the OECD in 2008 and fielded every five years. We use the 2013 (second phase) teacher survey data which include information on diverse aspects of teachers, such as teaching practices, professional development, work environment, and levels of self-efficacy and job satisfaction. In TALIS 2013, a total of 34 countries[2] participated, and the final international sample includes more than 170,000 teachers from more than 10,000 schools. The survey was conducted between 2012 and 2013 through either paper-based or online-based methods.

[1] Although the main target group for TALIS is teachers and principals of middle schools (International Standard Classification of Education (ISCED) level 2), countries had the option of conducting additional surveys for the ISCED levels 1 (primary school) and 3 (upper-secondary school) (OECD, 2014a).

[2] The countries that participated in the 2013 TALIS survey are Australia, Belgium (Flanders), Brazil, Bulgaria, Canada (Alberta), Chile, Croatia, Cyprus, the Czech Republic, Denmark, England, Estonia, Finland, France, Iceland, Israel, Italy, Japan, Korea, Latvia, Malaysia, Mexico, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Singapore, the Slovak Republic, Spain, Sweden, the United Arab Emirate (Abu Dhabi), and the United States. The data for Cyprus and Iceland were not publically available, and the data for the U.S. did not meet the sampling standards (OECD, 2014a), and thus these three countries were excluded from this research.

Figure 1. International comparison of the rate of group work



Note: The Rate of Group Work (%) is the share of teachers who conduct group work either "frequently" or "in all or almost all lessons."

Source: TALIS 2013.

As a measure of the frequency with which learner-centered teaching is used, we use the TALIS variable which asks teachers how often "students work in small groups to come up with a joint solution to a problem or task." The response to this question takes a four-point scale: 1) Never; 2) Occasionally; 3) Frequently; 4) In all or nearly all lessons. This measure is particularly representative of learner-centered teaching in that rather than simply referring to working in groups, it refers also to the option of developing a joint solution to a given problem or task. This represents the active role of the learner as articulated by constructivist learning theories (Dewey, 1944).

Figure 1 displays the rate of group work that occurs in middle schools within each country. We refer to the rate of group work as the share of teachers who conduct group work either "frequently" or "in all or almost all lessons." The rate of group work ranges from slightly above 30% for countries with the lowest rates, up to approximately 80% of teachers. Asian countries, including South Korea, Japan, and Singapore, tend to have low levels of group work in class. This reflects the high level of teacher-centered teaching that is known to be prevalent in Asian countries (Kim, 2005). At around 80%, Denmark has the highest proportion of teachers that use group work in class.

For teacher self-efficacy, TALIS measures three different sub-scales: 1) efficacy in instruction; 2) efficacy in student engagement; and 3) efficacy in classroom management.

Four questions are asked for the assessment of each of the sub-scales, which are answered on a four-point Likert scale. The questions can be found in Table A1 of the Appendix. The integrated measure of teacher self-efficacy is the average of the values of the three sub-scales. Thus, in total, four variables pertaining to self-efficacy are available.

For teacher job satisfaction, TALIS has two measures: 1) satisfaction with current work environment, and 2) satisfaction with the profession. Satisfaction with current work environment refers to how teachers feel about their current school, while satisfaction with the profession refers to how teachers feel about their work as teachers. As teaching practices are part of the core tasks of the teaching profession, rather than the school environment, we refer only to satisfaction with the profession when we discuss and analyze teacher job satisfaction. The job satisfaction variable is derived based on answers to four questions answered on a four-point Likert scale; the questions used for assessment are shown in Table A2 of the Appendix.

The sub-scales of self-efficacy and the measure of satisfaction with the profession were re-scaled to have a standard deviation of 2.0 and the mid-point of 10 coincides with the mid-point of each of the scale (i.e. 2.5 on a scale of 1 through 4).[3] To assess the internal consistency of the constructs, we used Cronbach's alpha, and obtained the following scores: efficacy in instruction ($\alpha = 0.772$); efficacy in student engagement ($\alpha = 0.833$); efficacy in classroom management ($\alpha = 0.831$); overall self-efficacy ($\alpha = 0.900$); and satisfaction with profession ($\alpha = 0.730$).

To analyze the relationship between learner-centered teaching and teacher self-efficacy and job satisfaction, we first estimate cross-country correlations using TALIS data. Figure 2 displays the cross-country relationship between the use of group work and teacher self-efficacy. A positive relationship is evident; the coefficient of correlation is 0.495.

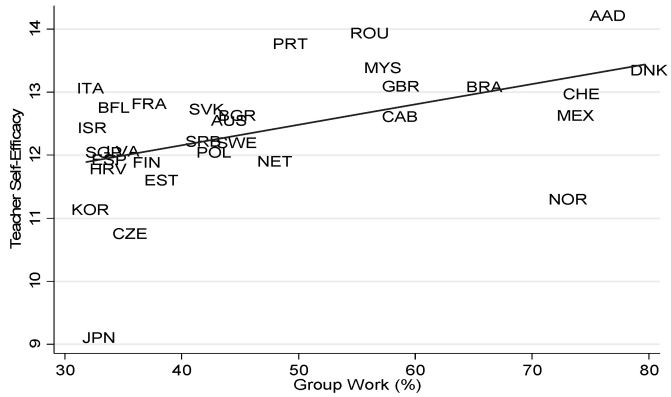
Figure 3 displays the relationship between group work and teacher job satisfaction. While there does appear to be a positive relationship, the correlation coefficient (0.244) is not as large as the relationship with teacher self-efficacy. It should be noted that such cross-country correlations do not consider systematic differences across countries nor teacher- and school-level differences that may affect the relationship between learner-centered teaching and teacher self-efficacy and job satisfaction.

Next, we analyze data at the teacher level to estimate the relationship between learner-centered teaching and teacher self-efficacy. We exclude those teachers in the sample who have missing values for the dependent and independent variables used in our analysis. We recode the variable for the rate of group work as a dummy variable which takes the value of 1 if group work is conducted "frequently" or "in all or nearly all lessons," and 0 if conducted "occasionally" or "never or almost never." We restrict our sample to those teachers who stated that the answers they provided to the survey questions

[3] For details on the statistical procedure of obtaining the self-efficacy measurements, please refer to OECD (2014b).

pertain to the class that is either "representative" or "very representative" of the typical class that they teach. The descriptive statistics of the working sample are shown in Table 1.

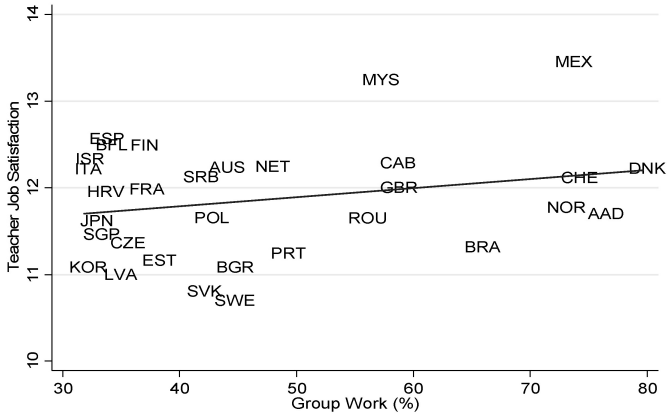
Figure 2. The rate of group work and teacher self-efficacy



Note: The Rate of Group Work (%) is the share of teachers who conduct group work either "frequently" or "in all or almost all lessons."

Source: TALIS 2013.

Figure 3. The rate of group work and teacher job satisfaction



Note: The Rate of Group Work (%) is the share of teachers who conduct group work either "frequently" or "in all or almost all lessons."

Source: TALIS 2013.

Table 1. Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max
Teacher self-efficacy	65225	12.40	1.87	3.78	15.52
Efficacy in instruction	65225	12.45	2.01	2.95	15.77
Efficacy in student engagement	65225	11.96	2.01	3.80	15.37
Efficacy in class management	65225	12.79	1.98	3.97	15.66
Job satisfaction	65225	11.75	2.03	4.43	15.10
Group work	65225	2.47	0.73	1	4
Female	65225	0.32	0.47	0	1
Age	65195	42.48	10.44	18	76
Doctorate degree	65225	0.02	0.13	0	1
Total teaching experience (years)	65225	16.23	10.34	0	58
Permanent employment status	65225	0.82	0.38	0	1

Notes: Sub-scales of teacher self-efficacy were measured through the answers to four questions each, answered on a 4-point Likert scale (1. Not at all ~ 4. A lot). *Teacher self-efficacy*: the average of the three variables for the sub-scales of teacher self-efficacy. *Job satisfaction*: refers to self-perceived satisfaction with the teaching profession; measured through the answers to four questions, answered on a 4-point Likert scale (1. Strongly disagree ~ 4. Strongly agree). *Group work*: dummy variable indicating the relative frequency with which working in groups is conducted in class (=1 if conducted "frequently" or "in all or almost all lessons"; =0 if conducted "occasionally" or "never or almost never"). *Doctorate degree*: dummy variable indicating the completion of a doctorate degree. *Permanent employment status*: dummy variable indicating whether individual is a permanent employ (=1) or on a temporary contract (=0).

Source: TALIS 2013

In order to estimate the relationship that learner-centered teaching has with teacher self-efficacy and teacher job satisfaction, we estimate the following regression model:

$$y_{ijc} = \beta_0 + \beta_1 Groupwork_{ijc} + \gamma X_{ijc} + F_{jc} + \varepsilon_{ijc} \quad (1)$$

where y_{ijc} is the self-efficacy or job satisfaction level of teacher i in school j in country c, standardized to have a mean of 0 and standard deviation of 1; $Groupwork_{ijc}$ is the dummy variable that reflects the frequency of using group work in class by teacher i in school j in country c; X_{ijc} is a vector of teacher and classroom characteristics (gender, total years of teaching experience, completion of doctorate degree, employment status, and variables indicating the percentage of students in the class who are gifted or academically low-achievers) of teacher i in school j in country c; F_{jc} is the indicator variable for school j in country c (i.e., the school fixed effect); and ε_{ijc} is the error term.

Given that schools are unique to a country, controlling for school fixed effects

simultaneously controls for country fixed effects. Including country fixed effects in the model allows for controlling factors pertaining to a country which are systematically associated with the outcome and other explanatory variables. Also, it is possible that differences among schools within a country, such as the school culture and principal leadership, may contribute to differences in teaching practice, teacher self-efficacy and job satisfaction. In regards to such differences, teachers may self-sort into specific schools, although the possibility of this would differ across countries and perhaps also across geographic areas within a country. Therefore, to estimate the average within-school correlation between learner-centered teaching and the outcome variables of interest, we control for school fixed effects.

Findings

Table 2 reports the OLS estimates of the statistical association between learner-centered teaching and teacher self-efficacy using equation (1). Column 1 shows the results the of the estimates while only controlling for country fixed effects. Compared to those teachers who occasionally or never use group work in class, teachers who frequently or always use group work are likely to have, on average, a higher level of self-efficacy by 0.288 standard deviation, with the estimate being statistically significant at the 0.01 level. In columns 2 and 3, it is evident that the strong and positive association between group work and self-efficacy persists even after controlling for teacher and classroom characteristics, as well as school fixed effects.[4]

We also see that teacher self-efficacy has a significant and positive association with years of teaching experience, but as found in a previous study (Klassen & Chiu, 2010), the relationship is non-linear. This could mean that confidence in teaching capacity increases with experience in the earlier years but gradually declines in later years. It may also reflect patterns of work motivation, where work motivation may decline with experience mainly through age-related factors, such as health, changing values, and decline in skills (Kooij, de Lange, Jansen, & Dikkers, 2008). Having a higher proportion of academically gifted students in class has a positive relationship with teacher self-efficacy, while the proportion of low-achievers has a negative association. Such a pattern is in line with the findings that teacher self-efficacy is positively associated with student achievement (Tschannen-Moran & Woolfolk Hoy, 2001). Lastly, we see that female teachers tend to have lower levels of teacher self-efficacy, and an advanced academic degree is not associated with teacher self-efficacy.

The results of estimating equation (1) with the sub-scales of teacher self-efficacy as the dependent variable are shown in Table 3. In general, the explanatory variables display

[4] Although the findings are not reported in this paper, we find that within-country estimates of group work, obtained by running separate regressions for each country, is statistically significant for all countries in the data.

Table 2. Group work and teacher self-efficacy

Dependent Variable: Teacher Self-Efficacy	(1)	(2)	(3)
Group work	0.288***	0.275***	0.267***
	(0.012)	(0.012)	(0.012)
Female		-0.048***	-0.049***
		(0.012)	(0.012)
Experience		0.018***	0.020***
		(0.002)	(0.002)
Experience^2		-0.028***	-0.032***
		(0.005)	(0.005)
Doctorate degree		0.039	0.051
		(0.054)	(0.057)
Permanent		0.005	0.011
		(0.014)	(0.017)
Prop. acad. gifted		0.004***	0.004***
		(0.000)	(0.000)
Prop. low achievers		-0.003***	-0.002***
		(0.000)	(0.000)
Country fixed effects	Yes	Yes	Yes
School fixed effects	No	No	Yes
Observations	65,225	65,225	65,225
R-squared	0.379	0.392	0.476

Notes: *Teacher self-efficacy* variable standardized to have a mean of 0 and standard deviation of 1. *Group work*: dummy variable indicating the relative frequency with which working in groups is conducted in class (=1 if conducted "frequently" or "in all or almost all lessons"; =0 if conducted "occasionally" or "never or almost never"). *Experience*: total years of teaching experience. *Experience*^{2} divided by 1000. *Doctorate degree*: dummy variable indicating completion of doctorate degree. *Permanent*: dummy variable indicating permanent employment status. *Prop. acad. gifted*: proportion of students in the class that are academically gifted. *Prop*. *low achievers*: proportion of students in the class that are low academic achievers. Standard errors obtained through balanced repeated replication weights in parentheses.
***p<0.01, **p<0.05, *p<0.1.

Source: TALIS 2013

the same pattern of association with the sub-scales as they have with the overall teacher self-efficacy measure. One difference, however, is that having permanent employment status, compared to being on a temporary contract, has a significant and positive association only with efficacy in classroom management. One possible explanation for this is that teachers with permanent employment status may have had longer tenure at the particular schools in which they work compared to those on temporary contracts, allowing them to be more familiar with the students whom they teach. Knowing their students better may allow them to be more effective in managing the classroom.

Table 4 presents the results of estimating equation (1) with teacher job satisfaction as the dependent variable. Across different specifications, we see that more frequent implementation of group work is significantly and positively associated with job satisfaction. Controlling for teacher and classroom characteristics, as well as school fixed effects, we see that more frequent use of group work is associated with higher levels of job satisfaction by 0.173 standard deviation, significant at the 0.01 level. Interestingly, we see that permanent employment status and years of teaching experience have negative correlations with job satisfaction. It may be that those with permanent employment status or more experience have higher workloads and responsibilities (both teaching and administrative), which can contribute to higher stress and lower job satisfaction (Collie, Shapka & Perry, 2012).

The findings here show that teacher perceptions of efficacy and job satisfaction may not always move in the same direction in terms of their relationships with experience; with more experience, teachers may gain more confidence in their technical capacity to be effective teachers, but also receive less satisfaction with their profession. Column 4 in Table 4 adds teacher self-efficacy as a control variable to the estimated model. We see that self-efficacy has a positive and significant association with job satisfaction, while the positive association between group work and job satisfaction persists. Attenuation of the coefficient estimate of the group work variable after the addition of teacher self-efficacy to the model could imply that a portion of the relationship between group work and job satisfaction may be moderated by associations with teacher self-efficacy.

Discussion and Conclusion

Using an international data set comprised of 31 countries, this study finds that the use of learner-centered pedagogy, namely group work which requires developing joint solutions to tasks, is positively associated with both teachers' level of self-efficacy and satisfaction with the teaching profession. Statistically significant associations persist after controlling for teacher-, classroom-, school-, and country-level factors. In particular, this study sheds light on the importance that pedagogy can have not only for students and their outcomes, but also for the teachers who directly implement it.

A limitation of our study is that countries included in the sample are mostly OECD countries located in Europe. Future research should include a more diverse set

Table 3. Group work and sub-scales of teacher self-efficacy

Dependent Variable:	(1) Efficacy in Instruction	(2) Efficacy in Student Engagement	(3) Efficacy in Classroom Management
Group work	0.283***	0.252***	0.210***
	(0.012)	(0.011)	(0.014)
Female	-0.064***	-0.039***	-0.034***
	(0.012)	(0.011)	(0.013)
Experience	0.016***	0.016***	0.025***
	(0.002)	(0.002)	(0.002)
Experience^2	-0.024***	-0.023***	-0.042***
	(0.005)	(0.005)	(0.005)
Doctorate degree	0.102*	0.084	-0.044
	(0.055)	(0.052)	(0.062)
Permanent	-0.007	-0.023	0.063***
	(0.017)	(0.015)	(0.019)
Prop. acad. gifted	0.004***	0.004***	0.003***
	(0.000)	(0.000)	(0.000)
Prop. low achievers	-0.001***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)
Country fixed effects	Yes	Yes	Yes
School fixed effects	Yes	Yes	Yes
Observations	65,225	65,225	65,225
R-squared	0.472	0.541	0.359

Notes: Sub-scales of self-efficacy variables standardized to have a mean of 0 and standard deviation of 1. *Group work*: dummy variable indicating the relative frequency with which working in groups is conducted in class (=1 if conducted "frequently" or "in all or almost all lessons"; =0 if conducted "occasionally" or "never or almost never"). *Experience*: total years of teaching experience. *Experience*^{2} divided by 1000. *Doctorate degree*: dummy variable indicating completion of doctorate degree. *Permanent*: dummy variable indicating permanent employment status. *Prop. acad. gifted*: proportion of students in the class that are academically gifted. *Prop. low achievers*: proportion of students in the class that are low academic achievers. Standard errors obtained through balanced repeated replication weights in parentheses.
***p<0.01, **p<0.05, *p<0.1.

Source: TALIS 2013

Table 4. Group work and teacher job satisfaction

Dependent Variable: Teacher Job Satisfaction	(1)	(2)	(3)	(4)
Group work	0.193***	0.176***	0.173***	0.107***
	(0.013)	(0.013)	(0.014)	(0.013)
Female		-0.064***	-0.068***	-0.056***
		(0.013)	(0.014)	(0.014)
Experience		-0.018***	-0.014***	-0.019***
		(0.002)	(0.002)	(0.002)
Experience^2		0.046***	0.039***	0.047***
		(0.006)	(0.006)	(0.006)
Doctorate degree		-0.077	-0.063	-0.075
		(0.047)	(0.051)	(0.049)
Permanent		-0.014	-0.042**	-0.045***
		(0.017)	(0.018)	(0.017)
Prop. acad. gifted		0.003***	0.003***	0.002***
		(0.000)	(0.000)	(0.000)
Prop. low achievers		-0.007***	-0.006***	-0.006***
		(0.000)	(0.000)	(0.000)
Teacher self-efficacy				0.248***
				(0.008)
Country fixed effects	Yes	Yes	Yes	Yes
School fixed effects	No	No	Yes	Yes
Observations	65,225	65,225	65,225	65,225
R-squared	0.116	0.138	0.271	0.308

Notes: *Teacher job satisfaction and Teacher self-efficacy* variables standardized to have a mean of 0 and standard deviation of 1. Group work: dummy variable indicating the relative frequency with which working in groups is conducted in class (=1 if conducted "frequently" or "in all or almost all lessons"; =0 if conducted "occasionally" or "never or almost never"). *Experience*: total years of teaching experience. *Experience*^{2} divided by 1000. *Doctorate degree*: dummy variable indicating completion of doctorate degree. Permanent: dummy variable indicating permanent employment status. *Prop. acad. gifted*: proportion of students in the class that are academically gifted. *Prop. low achievers*: proportion of students in the class that are low academic achievers. Standard errors obtained through balanced repeated replication weights in parentheses.
***p<0.01, **p<0.05, *p<0.1.

Source: TALIS 2013

of countries, including developing countries and countries from non-European regions, as educational reform to increase and improve the use of learner-centered teaching is discussed in these regions as well. This would also help expand the generalizability of the findings to more parts of the globe. Also, to better understand the micro-level process on teacher measures and pedagogy, future studies might more closely investigate how the socioeconomic and cultural contexts interact with learner-centered teaching and self-efficacy/job satisfaction of teachers.

Due to the cross-sectional nature of the TALIS data used in this study, we are not able to investigate the causal relationships or mechanisms that explain the association that learner-centered pedagogy has with teacher self-efficacy and job satisfaction. Estimation of a causal relationship would require data collected at multiple points in time to allow for analysis of temporal changes in pedagogy as well as teacher self-efficacy and job satisfaction. To this end, researchers should collaborate with schools and teachers to design and implement social experiments which allow for direct assessment of causal relationships. While the bulk of the existing literature tends to treat teaching practice and quality simply as an outcome of teacher perceptions of their teaching, some studies have indicated that teaching practices themselves may affect teacher constructs (Holzberger et al., 2013; Stein & Wang, 1988). Future studies should look into the actual mechanisms that explain the relationship between teaching practice, on the one hand, and teacher self-efficacy and job satisfaction, on the other.

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Appendix

Table A1. Survey questions for assessing teacher self-efficacy

(a) Efficacy in instruction
In your teaching, to what extent can you do the following?

Question	Not at all	To some extent	Quite a bit	A lot
Craft good questions for my students	①	②	③	④
Use a variety of assessment strategies	①	②	③	④
Provide an alternative explanation for example when students are confused.	①	②	③	④
Implement alternative instructional strategies in my classroom	①	②	③	④

(b) Efficacy in student engagement
In your teaching, to what extent can you do the following?

Question	Not at all	To some extent	Quite a bit	A lot
Get students to believe they can do well in school work	①	②	③	④
Help my students value learning	①	②	③	④
Motivate students who show low interest in school work.	①	②	③	④
Help students think critically	①	②	③	④

(c) Efficacy in classroom management
In your teaching, to what extent can you do the following?

Question	Not at all	To some extent	Quite a bit	A lot
Control disruptive behavior in the classroom	①	②	③	④
Make my expectations about student behavior clear	①	②	③	④
Get students to follow classroom rules	①	②	③	④
Calm a student who is disruptive or noisy	①	②	③	④

Table A2. Survey questions for assessing teacher job satisfaction

How strongly do you agree or disagree with the following statements?

Question	Strongly disagree	Disagree	Agree	Strongly agree
The advantages of being a teacher clearly outweigh the disadvantages	①	②	③	④
If I could decide again, I would still choose to work as a teacher	①	②	③	④
I regret that I decided to become a teacher	①	②	③	④
I wonder whether it would have been better to choose another profession	①	②	③	④