

# Assessing the Effects of Classroom Management and Collaboration in Lesson Development on Professional Development: A case of Shanghai Secondary School Teachers in China

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**Abstract:** This study intended to assess the effects of classroom management and professional collaboration in lesson development among teachers on effective professional development to Shanghai secondary school teachers in China. The study used Teaching and Learning International Survey (TALIS) data which was conducted in 2018 by the Organization for Economic Cooperation and Development (OECD). The data were analyzed by Statistical Package for the Social Science (SPSS). The results showed the increase of the needs for professional development for diversity cause an increase of the needs for professional development for subject matter. At the same time, when the exchange and cooperation among teachers increases, resulting to the increase of professional collaboration in lesson development. Also, the gender differences were identified in the selected variables such as classroom management, collaboration in lesson development and effective professional development. However, the findings revealed that, classroom management was very low to predict effective teacher professional development while the professional collaboration was very high to predict effective professional development. Hence, the school principals are held accountable to show that their faculties are engaged in highly effective professional development

**Keywords:** Classroom Management; Professional Collaboration; Effective Teacher Professional Development.

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## I. INTRODUCTION

Understanding classroom management for teachers and their professional collaboration on lesson plan development is critical to archive positive education outcome for students. Due to the nature of training that student-teachers receive during their initial teacher training which failed to equip them with required skills and techniques for classroom management and lesson development, this call for in-service teachers professional development (TPD). According to Organization for the Economic Co-operation and Development (OECD) through Program for International Student Assessment (PISA) identified Shanghai as the best performing educational system. This has been shown through the PISA performance for more than three years consecutively. Studies (e.g., Ainley, Carstern, 2018; Liang, Kidwai, and Zhang, 2016) revealed that Shanghai performance has been associated with the good management of teachers and their educational development. However, they noted that teaching profession is well respectable profession which attract young people because of the best salaries, rigorous preservice education, and pervasive school-based professional development.

According to this feedback from PISA results and scholarly experience, the author decided to conduct the study on the analysis of the effects of classroom management and professional collaboration in lesson plan development on the professional development in Shanghai. This study was intended to understand, whether the professional development received by Shanghai teachers helped them in classroom management and in lesson plan development.

## II. STATEMENT OF THE PROBLEM

Many studies have been conducted to understand the contributions of professional development in relationship with other variables. The studies of Wilkinson, Freeman, Simonsen, Sears, Byun, Xu and Hao-Jan Luh, (2020) identified the contribution of PD to the classroom management. Their results suggested that effective PD (i.e., desired changes in teacher and student behavior) is predominantly studied at the elementary school level and, in addition to generic in-service training. Another studies Egeberg, McConney, Price (2021) on their studies, follow up interviews with teachers identified by students as effective in their classroom management provided consistent reports that effective classroom managers build positive relationships with their students, manage their classrooms by establishing clear boundaries and high expectations, and engage students in their learning. This shows there's limited number of studies which explored the effects of classroom management and collaboration in lesson development on professional development in selected area.

Enlightenment with these initiatives, the author decided to conduct the study on the effects of classroom management and collaboration in lesson development on professional development to Shanghai secondary school teachers. The following keywords helps to build the foundations of the current study;

### ***A. Teachers Professional development (TPD)***

Professional development programs are systematic efforts to bring about change in the classroom practices of teachers, in their attitudes and beliefs, and in the learning outcomes of students (Guskey, 2002). This training received by in-service teachers to develop skills during their careers and improving their quality. When teacher participating in the professional development they experience set of activities and socialization with others colleagues which increase their skills and knowledge, enhancing their teaching practices and contribute to their emotional growth, social and personal development (Cohen, McLaughlin, and Talbert 1993). The activities associated with their professional development are in the form of local and national conference, workshops, seminars, programs and so on.

### ***B. Classroom Management (CM)***

TALIS (2018) in the concept document, defined classroom management as the ability or beliefs of teachers to establish an orderly learning environment, effective use of time during the lessons and, therefore, effectively manage disruptive student behavior. However, the large international assessments of the students achievement through their studies (e.g., Martin et al., 2013; Wang and Degol, 2016) have found positive relationship in many countries between a safe and orderly environment and students achievement. Therefore, this positive disciplinary climate in the classroom saved as an indicator of the classroom management in the TALIS 2018

### ***C. Professional Collaboration in lesson plan development***

As defined by TALIS (2018) Collaboration is a professional practice of high interest to teachers and policy makers alike. Also, collaboration can play a role in supporting teacher reflection and help teachers develop a more purposeful knowledge base. It can also be valuable for supporting changes in teaching practice because it encourages professional communication and sharing among teachers. Studies (e.g., Timperley et al., 2007; Garet et al., 2001) identified different forms of collaboration which including formal opportunities in the learning organization and equally valuable informal and voluntary collaboration triggered by the situations or challenges teachers themselves collectively feel the need to address. This study intended to understand collaboration in term of lesson plan development among teachers in Shanghai.

### **The objectives of the study**

As the purpose of this study is to understand the effects of classroom management and collaboration in lesson development on teachers professional development, through answering the following questions;

What is the correlation between need for professional development for diversity with need for professional development for subject matter?

What is the correlation between professional collaboration in lesson among teachers with exchange and cooperation among teachers?

What are the gender difference with classroom management, collaboration in lesson development and Teacher professional development?

Do teachers classroom management, collaboration in lesson plan development, teachers age group, and gender have an influence on effective teacher professional development?

**With above research questions, the following hypothesis were formulated**

H0: There is no correlation between need for professional development for diversity with need for professional development for subject matter.

H1: There is correlation between need for professional development for diversity with need for professional development for subject matter.

2. H0: There is no correlation between professional collaboration in lesson among teachers with exchange and cooperation among teachers

H1: There is correlation between professional collaboration in lesson among teachers with exchange and cooperation among teachers

3. H0: There is no statistical mean differences regards to how gender differ with classroom management, professional collaboration in lesson development and effective teacher professional development

H1: There is a statistical mean differences regards to how gender differ with classroom management, collaboration in lesson development and effective teacher professional development

4. H0: There is no a significant prediction of effective teacher professional development with teachers classroom management, collaboration in lesson development, teachers age group and gender

H1: There is a significant prediction of effective teacher professional development with teachers classroom management, collaboration in lesson development, teachers age group and gender

### **III. LITERATURE REVIEW**

#### **Studies on Classroom Management**

Numerous researches have identified classroom management as an essential contributor to students learning and a strong predictor of student achievement (see, for instance, Klusmann et al., (2008); van Tartwijk and Hammerness, (2011); Baumert et al., (2010)). The studies (e.g., Brouwers and Tomic, 2000) defined classroom management as teachers' beliefs about their ability to establish an orderly learning environment and, therefore, effectively manage disruptive student behavior. Brouwers and Tomic, (2000) on their study described the term as the action teachers take to ensure an orderly environment and effective use of time during lesson. Teachers described as the main stakeholder on the creation of conducive environment to support students learning process. However, different studies (e.g., Baumert et al., 2010; Klusmann et al., 2008) they explored lack of teachers abilities or capacity in creating conducive environment to support students learning. Their studies suggested the effective professional development for teachers so as to gain required skills and ability to manage their classroom. The studies (e.g., Martin et al., 2013; Wang and Degol, 2016) conducted studies on international assessments of the students achievements which found a positive relationship in several countries between their achievement and ability of teachers in managing their classroom. Thus, created need for assessing the contribution of classroom management on the effective professional development among teachers.

#### **Studies on Teachers Collaboration**

Collaboration noted as professional practices of highly interest to teachers and policy makers. As noted in the TALIS 2013 conceptual framework (OECD, 2013, p. 36[14]), researches have repeatedly found the collaborations among teachers to be a particularly most important professional practices because it appears to play a role in various elements of teachers' work, such as learning, teaching practice, decision making, satisfaction and in school culture. Therefore, collaboration is not limited on the lesson development among teachers as noted on the current study, but goes further through contributing on school culture, teachers learning e.t.c as noted by (Goddard and Tschannen-Moran, 2007; Desimone, 2009). Also, can play a major roles in facilitating teachers self-reflection (Harris, 2002; Tse, 2007) and assisting teachers in developing required knowledge base as noted by (Erickson et al., 2005). Other studies (e.g., Timperley et al., 2007; Garet et al., 2001) identified the contribution of collaboration on supporting changes in teaching practices since it encourage professional communication and experience sharing among teachers.

### **IV. RESEARCH METHODS**

The present study employs quantitative approaches to study the effects of classroom management and collaboration in lesson development on teacher professional development among Shanghai secondary school teachers in China. The source of data for this study is the Teaching and Learning International Survey (TALIS) which was conducted in 2018 by the Organization for Economic Cooperation and Development (OECD).

### Variables included

This study have one dependent variable which is Effective Teacher Professional Development. The study selected effective professional development (T3EFFPD), need for professional development for diversity (T3PDIV), need for professional development in subject matter (T3DPED), and exchange and cooperation among teachers (T3EXCH). Also, the study have independent variables such as teachers classroom management (T3CLASM) and professional collaboration in lesson development (T3COLES). At the same time, controlling gender (categorical variable) and teachers age groups (categorical variable).

### Analysis Method

For the question one and two, the study used Bi-variate correlation analysis since the author was interested to understand the existing correlation between need for professional development for diversity with need for professional development for subject matter. Also, the correlation between professional collaboration in lesson among teachers with exchange and cooperation among teachers.

Question three, the author was interested to compare mean between groups, such as gender with other selected variables such as classroom management, professional collaboration in lesson development and effective teacher professional development. Thus, independent sample T-Test was employed to verify the validity of the hypothesis formulated.

For the last question, the author was interested to investigate the effect of professional collaboration in lesson among teachers, classroom management on the effective professional development. Lastly, prediction of the suitable multiple linear regression model. The study used effective professional development as dependent variable with two independent variables such as teachers classroom management, professional collaboration in lesson development while controlling gender and teachers age groups. In this regards, the study used multiple linear regression to predict the model and investigating the effect of professional collaboration in lesson among teachers, classroom management through controlling gender, teacher age group on the effective teacher professional development.

## V. RESULTS

This section presented the findings of this study. The findings were presented orderly with the guiding research questions. The descriptive statistics were presented first in order to study the population characteristics of Shanghai Secondary School teachers.

**Table 1: Percentage distribution of Gender among respondents**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	2941	74.0	74.0	74.0
	Male	1035	26.0	26.0	100.0
	Total	3976	100.0	100.0	

The table above described the percentage distributions of the population in which 2941 were female teachers with 74.0% and 1035 were male teachers with only 26.0% which makes gender difference of 48.0%

**Table 2: Highest level of formal education respondents completed**

		Frequency	Percent	Valid Percent	C.P
Valid	<Below ISCED Level 5>	35	.9	.9	.9
	<ISCED Level 6>	3413	85.8	86.1	87.0
	<ISCED Level 7>	514	12.9	13.0	100.0
	<ISCED Level 8>	1	.0	.0	100.0
	Total	3963	99.7	100.0	
Missing	Omitted or Invalid	13	.3		
Total		3976	100.0		

As the table above showed the highest formal education respondents completed, the results revealed that majority of secondary school teachers in Shanghai hold bachelor degree presented by 3413 equals to 85.8%. Followed by masters degree presented by 514 equals to 12.9%, then teachers hold qualifications below bachelor degree about 35 equals to .9% and lastly teacher hold PhD presented by 1 equals to .001%.

**Table 3: Teachers Age Group**

	Frequency	Percent	Valid Percent	Cumulative Percent
Under 25	119	3.0	3.0	3.0
25-29	534	13.4	13.4	16.4
30-39	1316	33.1	33.1	49.5
Valid 40-49	1418	35.7	35.7	85.2
50-59	566	14.2	14.2	99.4
60 and above	22	.6	.6	100.0
Total	3975	100.2	100.0	
Missing Not administered	1	.0		
Total	3976	100.0		

The table below shows the teachers age group in Shanghai secondary schools. The results shows that majority of the population their age range from 40-49 presented by 1418 equals to 35.7%. Followed by 30-39 presented by 1316 equals to 33.1% of the population. Thus, the minimum number of participants participated in this study, their age range from 60 years and above presented by 22 which is equals to .6%

**Hypothesis 01****Table 4: Correlation Analysis**

Need for TPD in subject matter	
Need for TPD for teaching diversity	0.651**

Note: \*\*.Correlation is significant at the 0.01 level (2-tailed).

The aim of this hypothesis was to identify the correlation between the need for professional development for diversity with the need for professional development for subject matter. The results revealed that there is a positive correlation between need for professional development for diversity and need for professional development for subject matter ( $r=.651$ ,  $p<.01$ ). Hence H1 was supported. This shows that when the need for professional development in diversity increase would leads to higher need of professional development for subject matter.

**Hypothesis 02****Table 5: Correlation Analysis**

Exchange and Cooperation among teachers	
Pro. Collaboration in lesson development	0.642**

Note: \*\*.Correlation is significant at the 0.01 level (2-tailed).

This hypothesis was aimed to explore the correlation between professional collaboration in lesson among teachers with exchange and cooperation among teachers. The results revealed that there is a positive correlation between professional collaboration in lesson among teachers with exchange and cooperation among teachers ( $r=.642$ ,  $p<.01$ ). Hence H1 was supported. This shows that an increase of professional collaboration in lesson among teachers would leads to an increase of exchange and cooperation among themselves.

**Hypothesis 03****Table 6: Independent Sample T-Test**

Group Statistics	Gender - T	N	Mean	Std. Deviation	Std. Error Mean
Classroom Management	Female	2426	10.9868037	2.04538623	0.04152694
	Male	825	11.0200325	1.97116609	0.06862719
Professional collaboration in lessons	Female	2919	9.1125014	1.94028326	0.0359127
	Male	1031	9.1503245	1.96836045	0.06130209
Effective professional development	Female	2531	11.9474967	1.58099202	0.0314256
	Male	901	11.962037	1.57593451	0.05250199

Independent Samples Test		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% CI of the Difference		
										Lower	Upper
CM	Equal variances assumed	1.781	0.182	-0.407	3249	0.684	-0.03322875	0.08168669	-0.19339138	0.12693389	
	Equal variances not assumed			-0.414	1470.893	0.679	-0.03322875	0.08021333	-0.19057346	0.12411597	
PC	Equal variances assumed	0.302	0.583	-0.536	3948	0.592	-0.0378231	0.07056064	-0.17616182	0.10051562	
	Equal variances not assumed			-0.532	1784.131	0.595	-0.0378231	0.07104695	-0.17716709	0.10152089	
ETPD	Equal variances assumed	0.148	0.7	-0.237	3430	0.812	-0.01454029	0.06128167	-0.13469256	0.10561197	
	Equal variances not assumed			-0.238	1587.911	0.812	-0.01454029	0.06118846	-0.13455895	0.10547836	

An independent sample T-test was conducted to find whether or not gender differ with classroom management, collaboration in lesson among teachers and effective teacher professional development.

The results from group statistics by placing emphasizing on classroom management; Females (M= 10.9868037 SD= 2.04538623 n= 2426) Males (M= 11.0200325 SD= 1.97116609 n= 825). The independent sample results of the Levene's test for equality of variance, F (1.781), p=0.182, indicates that the variance of Females and Males are equally assumed, in other words because the significance level under the Levene's test for equality is greater than 0.05 the variance between the two groups (Female's and Males) are the same. Additionally, the results of the independent t-test were statistically insignificant, t (3249) =-.407 p= 0.684 indicating that there is a significance difference between Females (M= 10.9868037 SD= 2.04538623 n= 2426) and that of Males (M= 11.0200325 SD= 1.97116609 n= 825) regarding teacher classroom management. The 95% confidence interval for the difference between the means of -0.19339138 to 0.12693389. Hence in this case alternate hypothesis was accepted and null hypothesis was rejected.

The results from group statistics by placing emphasizing on professional collaboration in lesson among teachers; Females (M= 9.1125014 SD= 1.94028326 n= 2919) Males (M= 9.1503245 SD= 1.96836045 n= 1031). The independent sample results of the Levene's test for equality of variance, F (.302), p=.583, indicates that the variance of Females and Males are equally assumed, in other words because the significance level under the Levene's test for equality is greater than 0.05 the variance between the two groups (Female's and Males) are the same. However, the results of the independent t-test were statistically insignificant, t (3948) =-.536 p= .592 indicating that there is significance difference between Females (M= 9.1125014 SD= 1.94028326 n= 2919) and that of Males (M= 9.1503245 SD= 1.96836045 n= 1031) regarding professional collaboration in lesson among teachers. The 95% confidence interval for the difference between the means of -.17616182 to .10051562. Hence in this case alternate hypothesis was accepted and null hypothesis was rejected.

Placing emphasizing on effective professional development; Females (M= 11.9474967 SD= 1.580099202 n= 2531) Males (M= 11.9620370 SD= 1.57593451 n= 901). The independent sample results of the Levene's test for equality of variance, F (.148), p=.700, indicates that the variance of Females and Males are equally assumed, in other words because the significance level under the Levene's test for equality is greater than 0.05 the variance between the two groups (Female's and Males) are the same. However, the results of the independent t-test were statistically insignificant, t (1587.911) =-.238 p=.812 indicating that there is significance difference between Females (M= 11.9474967 SD= 1.580099202 n= 2531) and that of Males (M= 11.9620370 SD= 1.57593451 n= 901) regarding to effective professional development. The 95% confidence interval for the difference between the means of -.13469256 to .10561197. Hence in this case alternate hypothesis was accepted and null hypothesis was rejected.

#### Hypothesis 04

Investigating the effect of professional collaboration in lesson among teachers, classroom management through controlling gender, teacher age group on the effective teacher professional development.

H0: There is no a significant prediction of effective teacher professional development with teachers classroom management, collaboration in lesson development, teachers age group, and gender

H1: There is a significant prediction of effective teacher professional development with teachers classroom management, collaboration in lesson development, teachers age group, and gender

The dependent variable (effective professional development) was regressed on the predicting variables of professional collaboration in lesson among teachers, classroom management, gender and teacher age group on effective professional development. The independent variables significantly predicts effective professional development,  $F(4,2843) = 24.242$ ,  $p < 0.001$ , which indicates that the two factors under the study have significantly impacts on effective professional development. Moreover, the  $R^2 = 0.033$  depicts that the model explain 3.3% of the variance in effective professional development. The table below shows the summary of the findings.

**Table 7: Multiple Linear Regression**

Hypothesis	Regression Weights	B	t	p-value	Hypothesis Supported
HA1	PC →ETPD	0.141	8.884	.000	H1 Supported, H0 Rejected
HA2	CM →ETPD	0.056	3.803	.000	H1 Supported, H0 Rejected
R	0.033				
F (4,2843)	24.242				

\* $p < 0.05$ . PC: Professional Collaboration, CM: Classroom Management, ETPD: Effective Teachers Professional Development

Thus, based to the regression analysis results above the following multiple linear regression equation were obtained;

$$ETPD = 10.038 - 0.013 \text{ GENDER} - 0.006 \text{ TEACHERS AGE} + 0.141 \text{ PC} + 0.056 \text{ CM}$$

## VI. DISCUSSION

The study showed teachers need professional development for diversity while at the same time their need for professional development for subject matter increasing in which  $r = .65$ . Studies (e.g., Parkhouse, Senechal, Gorlewski, 2018) identified the need of professional development for diversity among teachers which helps not only an individuals but also have great impacts on political, social and economic development. It is evidently that students in these centuries comes from different background including racially, religiously, ethnically and economically diverse which create pressure for schools to adopt these reform (Banks, 2004). However, these diversity on other hands created the multicultural global community which makes them to benefits from diversity perspectives such as languages, culture and share ideas. As the results showed this created needs for professional development for diversity among teachers, while at the same time create the needs for professional development on the their subject matters. This will help to create opportunities for thinking critically among teachers and students, building diverse understanding among groups and creating strong institution.

Also, this findings reveled there is positive correlation  $r = .642$  between professional collaboration in lesson among teachers with exchange and cooperation among teachers. This findings are similar with Killion (2012) who conducted study to find the existing relationship between professional collaboration among teachers and cooperation during teaching and learning process. His findings showed that there is strong correlation between these two variables. While professional collaboration among teachers take various forms such as with their fellows teachers, university based research, with their students and with others involved in teaching and learning process this strengthening their capacity on exchanging and cooperating to each other.

On other hand, classroom management is one among important component for teachers to manage their classroom. Based on TALIS Report, (2018) which identified that teachers in Shanghai showed high level of need for professional development in student behavior and classroom management. The current findings verified and noted gender differences among teachers in Shanghai on their classroom management in which male teachers is higher  $M = 11.0200325$  compared to female teachers  $M = 10.9868037$ . While their standard deviation for male and female were  $SD = 1.97116609$  and  $SD = 2.04538623$  respectively. Also, the gender differences in professional collaboration among teachers were relieved in which male teachers were higher  $M = 9.1503245$  compered to female teachers  $M = 9.1125014$ . This results shows that male teachers collaborate more in their lesson than female teachers in Shanghai. At the same time, the results shows the gender differences in effective professional development in which male teacher have higher mean average of  $M = 11.9620370$  compared to female mean average of  $M = 11.9474967$ . This results implies that female teachers were busy

and covered with families responsibilities which limiting them to attend professional development. While male teachers their mean average is high which showing that male teachers have greater chances of attending professional development for their professional growth.

The results from multiple linear regression on the predicting variables of professional collaboration in lesson among teachers and classroom management on effective professional development showed that professional collaboration in lesson among teachers contributing more at rate of 0.141 compered to classroom management at the rate of 0.056. At the same time  $r^2$  contributing 3.3% on effective professional development. These findings are similar to (e.g., Timperley et al., 2007; Garet et al., 2001) which showed professional collaboration have powerful implications to support teachers collective learning through improving the instructional practices. Also Hatch (2007) on his study found, this will help to bring teachers together and assisting on the understanding of student through planning, designing, implementing new instructional practices and helping teachers on reflecting on their teaching. However, as the prediction of classroom management on effective professional development was limited, studies (e.g., Klusmann et al., 2008; van Tartwijk and Hammerness, 2011) showed identified classroom management as capacity or ability and teachers behavior to enhance students' academic achievements as well as their emotional, social and moral growth. These support the current findings since individuals behavior has less prediction on the effectiveness of the professional development. Even though, the effective professional development can predict classroom management among teachers and assisting in designing suitable professional program to support.

## VII. CONCLUSION

Researchers should continue to investigate the effects of other variables such as exchange and cooperation among teachers, student-teachers relationship and others on the effective teachers professional development. This will helps to explore the existing relationship between variables which helps in designing suitable professional development program for teachers. Also, this findings will guiding policy makers and other education stakeholders in the formulation of feasible educational policies for improving teachers competences and teacher preparations.

This study also contributed to the findings and discussions on how effective professional development varies among different genders. Which showed that males teachers have higher mean average compared to females teachers. The school leaders or principals should finding approaches on how to address these differences in genders on the effective professional development. As the TALIS report, (2018) identified high need of professional development among Shanghai secondary school teachers on professional collaboration, subject matter and diversity, the similar findings revealed on the current study. The ministry of education in collaboration with school principals are held accountable to show that their faculties are engaged in highly effective professional development.

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