

A COMPARATIVE STUDY OF TEACHER COMPETENCE ACCORDING TO THEIR DEMOGRAPHICS IN HANZHONG HIGH SCHOOL OF SHAANXI PROVINCE, CHINA

Yuan Xu¹

Yan Ye²

Abstract: The main purpose of this research is to identify the level of teacher competence according to teachers' demographics factors including age, gender, and education background in Hanzhong High School of Shaanxi Province. Five components of teacher competence are pre-instruction, presentation, student learning, learning environment and professionalism. This study used the original questionnaire by Huyen (2003) study, which was adopted it from Medley (1977). All 168 full time teachers were surveyed in this study in Hanzhong High School of Shaanxi Province in the academic year 2018. This study found that there were significant differences about teacher competence according to age and education background in Hanzhong High School of Shaanxi Province. But there is no significant difference about teacher competence according to gender. For five components of teacher competence, teachers got the highest score in professionalism, but teachers have some problems in presentation.

Keywords: Teacher; Competence; Demographics; Hanzhong High School of Shaanxi Province.

Introduction

OECD (2011) proposed that teachers played an important role to motivate students to be innovative and curious about the pursuit of knowledge. A rounded educational system with quality teacher team is essential to stimulate economy robust growth for a nation, which caused all the schools to realize the significance of teachers' competence as a long-term focus (Peng, 2014). Nowadays, Chinese government implements new education policies and reform continually in order to focus on and improve the teachers' competence through different means. China's Ministry of Education has encouraged schools to reform and improve education quality for 40 years ago. Developing educational business is an imperative way to bring about Chinese Dream of the great rejuvenation of Chinese nation, which has critical influence on a national bright future in terms of science technology and economy.

¹ Teacher, Qingdao University of Science and Technology, Qingdao, China
xuyuan0125@gmail.com

² Assistant Professor, Ph. D, Lecturer, Graduate School of Human Sciences, Assumption University, Thailand. norayeyan723@hotmail.com

Teachers in different age group have different competence. In the context of demographics change, such as age or gender, teachers are different in professionalism. For example, the male teachers are less proficient than female teachers. The older teachers are more proficient than younger teachers. However, teachers were still confronting many problems and hardships in different schools of different provinces, so it was the school's duty to improve and develop their teacher team's competence to cope with crisis and improve the school effectiveness (Sudirman, 2017).

Hanzhong High School of Shaanxi Province is the biggest public high school that has the highest enrollment rate of college entrance examination in Hanzhong city, Shaanxi province. This researcher did some interview with some teachers from this school. According to the researchers' interview with the teachers, the school did a lot of teachers' professional development work, but there was no previous study or report about teacher competence based on their self-assessment in this school. From the interview with the leaders, the researcher heard that the school conducted many professional development activities always, such as encouraging teachers to transform traditional teaching method to new concepts through professional training; inspiring teachers to adapt to new technology and ICT tools to understand new information and improve innovation competence in the classroom; and pushing teachers to publish more research in China National Knowledge Internet, and so on. In fact, the school did evaluate the teachers' performance through the observation of leaders, peers, and questionnaires from students, but no previous study from teachers' perspectives to reveal their competence directly, therefore, the school leadership team encouraged this study to take place in this school.

Research Questions

There were three research questions as follows:

1. What were the teachers' demographics factors including age, gender and education background at Hanzhong High School of Shaanxi Province?
2. What was the level of teacher competence at Hanzhong High School of Shaanxi Province?
3. Were there any differences of teacher competence according age, gender and education background at Hanzhong High School of Shaanxi Province?

Research Objectives

There were three research objectives as follows:

1. To identify the teachers' demographics factors including age, gender

and education background at Hanzhong High School of Shaanxi Province.

2. To identify the level of teacher competence at Hanzhong High School of Shaanxi Province.
3. To compare the teacher competence according to age, gender and education background at Hanzhong High School of Shaanxi Province.

Literature Review

Role of Teachers in Education

The teachers took responsibility for designing, evaluating and managing the educational program for that student to meet the special and different needs of students (Irene, 2009).

Teacher Competence

Teacher competence is including knowledge, skills, attitudes and experience, which was a process of skillful experiences and educational performance. The initial and in service training was in the aspect of knowledge and skills, whatever changes and variation about students and environment. Teachers' competence could be able for self-development, variable and flexibility (Medley, 1977).

There were five components of teachers' competence including pre-instruction, presentation, learning environment, student learning and professionalism

Five Components of Teachers' Competence

Pre-instruction meant teachers should make a teaching plan before class, how to welcome students to learn according to engaging some activities (Jan, 2013). There were many ways to design teaching plan in different situations.

Presentation was a process that teachers show their knowledge, skills and comprehensive of information according to telling stories, interaction and communication. Under the current situation of the world reform of teachers' competence, teachers must improve professional competence and academic ability constantly. Good plans and professional knowledge were the basis for teachers, which supported teachers to teach effectively and professionally.

Learning environment was a place where there are many buildings, such as, teaching buildings, laboratory, and classrooms and so on. But in 21st century, learning environment was not only a place easily, but also a virtual system where students could get knowledge from Internet, robots or high technology.

Student learning meant that students get learning experiences and new approaches to improve their ability of problem solving, insight and practices according to guidance by teachers.

Professionalism meant teachers' competence and professional skills, reflecting many aspects, such as, updating teaching content, communicating with students and self-developing by many ways to contributing schools.

Conceptual Framework

Figure 1 is the conceptual framework of this study based on the theory above. This study identified the level of teachers' competence at Hanzhong High School of Shaanxi Province, in Shaanxi Province, China.

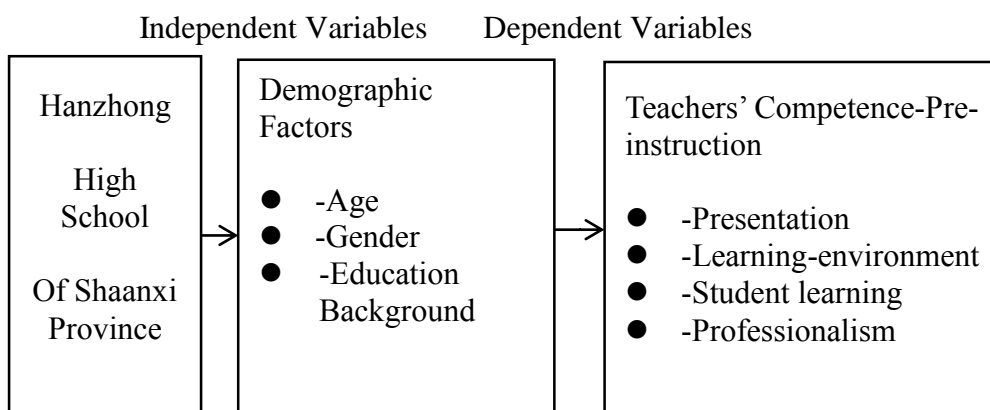


Figure 1: Conceptual Framework of This Study

Research Instrument

The researcher used the original questionnaire of Huyen (2003) study, which was adopted it from Medley (1977) originally. This questionnaire was divided into two parts. In the first part of this questionnaire, the object was about teachers' competence according to teachers' age, gender, education background at Hanzhong High School of Shaanxi Province. In the second part of this questionnaire, the object was about the level of teacher competence through components pre-instruction, presentation, learning environment, student learning and professionalism.

Population

There were total of 168 full-time teachers currently teaching in Hanzhong High School of Shaanxi Province, who were surveyed totally.

Findings

From research objectives, data analysis and there were three findings of this study as follows:

Research Objective One

Table 1 showed that the percentage of teachers' age groups in Hanzhong High School of Shaanxi Province. The percentage of teachers was 39.3 percent teachers under 30 years old, 44.7 percent teachers between 30 and 45 years old and 16 percent teachers between 45 and 60 years old.

Table 1: *Teachers' Age Group*

Age	Number	Percentage
Under 30	59	39.3
30-45	67	44.7
45-60	24	16
Totally	150	100

Table 2 showed that the percentage of teachers' gender in Hanzhong High School of Shaanxi Province. There were 54.7% female teachers, which was more than 45.3% male teachers.

Table 2: *Teachers' Gender*

Gender	Number	Percentage
Male	68	45.3
Female	82	54.7
Totally	150	100

Table 3 showed that the percentage of teachers' education background in Hanzhong High School of Shaanxi Province. There were 70% teachers obtaining bachelor degree, there were 30% teachers obtaining over bachelor degree.

Table 3: *Teachers' Education Background*

Education Background	Number	Percentage
Bachelor	105	70
Over bachelor	45	30
Totally	150	100

Research Objective Two

Table 4 below showed the overall of teachers' competence based on the five components in Hanzhong High School of Shaanxi Province. If the range was in 3.51-4.50, and the interpretation was high.

The teacher competence of professionalism was the highest 4.24, which was in 3.51-4.50. The interpretation was high. And it indicated the school had professional teachers.

While teacher presentation got the lowest mean scores 4.03, it was in 3.51-4.50. But it also reflected that teacher competence of presentation needs more improvement comparing to other components.

Table 4: Teacher Competence with Five Components

Teacher competence	Mean	S.D.	Interpretation
Professionalism	4.24	0.42	High
Learning environment	4.18	0.57	High
Student learning	4.13	0.27	High
Pre-instruction	4.11	0.36	High
Presentation	4.03	0.28	High
Overall	4.13	0.38	High

Research Objective Three

The last research objective was to compare the teachers' competence according to their age, gender, education background in Hanzhong High School of Shaanxi Province.

The researcher firstly compared teachers' competence according to their age. Table 5 below presented that there were significant differences of teacher competence according to age in Hanzhong High School of Shaanxi Province, as the p value of significance was .000, which indicated the F test was significant, and there were significant differences for at least one pair of groups.

Table 5: Comparison of the Teachers' Competence according to Their Age

Source of Variance	Sum of Squares	df	Mean Square	F	Sig
Between Groups	1.2	2	0.6	15	.000*
Within Groups	5.8	147	0.04		
Total	7.01	149			

In order to determine the significant differences in different pairs, Post Hoc multiple comparison of scheff's test on the teachers' competences according to their age group was further conducted. The multiple comparison result of this test was shown in Table 6 below. From Table 6, it could be concluded that the teachers in age group 30-45 years old had the highest competence; then followed the teachers under 30 years old. Teachers between 45-60 years old had the relative lowest level of competence.

Table 6: *Multiple Comparison of the Teachers' Competence according to Their Age*

Age (I)	Age (J)	Mean Difference	Sig.
Under 30 years	30-45 years	-0.12	.004*
	45-60 years	0.12	.029*
30-45 years	Under 30 years	-0.12	.004*
	45-60 years	-0.24	.000*
45-60 years	Under 30 years	-0.12	.029*
	30-45 years	-0.24	.000*

The researcher compared teachers' competence according to their gender. Since there were females and males for the teachers 'gender, the independent samples t-test was used for this test. Table 7 below showed that the p value significance was.63, which is more than .05 and there were no significant differences of Teachers' Competence according to gender at Hanzhong High School of Shaanxi Province.

Table 7: *Comparing the Teachers' Competence according to Their Gender*

Gender	Mean	S.D.	t-test for quality of means		
			t	df	Sig(2-tailed)
Male	4.13	0.21			
Female	4.14	0.22	-0.48	148	0.63

Table 8 below showed that the p value significance was.00, which is less than .05 and there were significant differences of Teachers' Competence according to Education Background at Hanzhong High School of Shaanxi Province. As observed, the teachers with Master degree and over showed higher competences than the ones with Bachelor degrees only.

Table 8: *Comparing the Teachers' Competence according to Their Education Background*

Education background	Mean	S.D.	t-test for quality of means		
			t	df	Sig(2-tailed)
Bachelor degree	4.09	0.19			
Master degree	4.24	0.23	4.03	148	.000*

Discussion

This study found there were significant differences of teacher competence according to education background in Hanzhong High School of Shaanxi Province, which is opposite to the study of Kavinda (2014) because of different environment between Myanmar and China. Nevzat (2009) pointed out that high level of teacher competence meant high teaching quality. High education background meant excellent ability to create positive student learning environment in pre-instruction and teaching process, and high professionalism in academic aspect.

There were significant differences of teacher competence according to age in this study, which is opposite to the study of Kavinda (2014). The level of teachers under 30 years old and over 30 years old about teacher competence are almost equal in Myanmar. However, there are different levels of teacher competence in Hanzhong High School of Shaanxi Province. Gunduz (2016) pointed out that teachers' responsibility should teach classes; make positive growth environment and keep good relationship with students. According to the interview, teachers over 30 years old could have good relationship with students and enjoyed teaching time in Hanzhong High School of Shaanxi Province. On the contrary, teachers between 45-60 years old had more experience; teachers couldn't catch up innovation to adjust themselves. Teachers should learn more new ICT knowledge. Therefore, OECD (2009) described that teachers should teach in using technological appliance for effective teaching.

Five components of teacher competence are pre-instruction, presentation, student learning, learning environment and professionalism. Teachers who worked in Hanzhong High School of Shaanxi Province got the highest score in professionalism. Robert (2010) claimed that some new teachers working an organization should be trained usually about teaching professionalism. Nowadays, a series of strict standard had been set when Hanzhong High School of Shaanxi Province enrolled new teachers according to the interview with teachers. And there are some advices as follow; Yu (2010) proposed that school should organize many activities to cultivate previous teachers, such as, inviting famous professionals to make a course of lectures; giving teachers

some accounts in order to improve teaching according to internet; and sending teachers to observe teaching of other schools. Because of these diverse opportunities and chances from schools, teachers kept enthusiastic and passionate in learning fresh teaching style so that teachers make progress constantly.

And teachers keep good relationship with students in Hanzhong High School of Shaanxi Province according to the interview. Alison (2017) claimed that teachers were good communicators between students and school; cooperated with students to finish teaching mission, took relative responsibility to treat students equally and enthusiastically.

However, the study found the mean score of presentation about teacher competence was the lowest, which suggested the school administrators should try to improve more of the teachers' presentation in their future work. Teachers should focus on the class assessment of writing and reading comprehension a lot, this may influence the way of teacher presentation in the classroom, which was also mentioned by some teachers in the interview process. Nowadays China's education system pays a lot more into the written examinations especially.

This may happen as in China every classroom contains a big population of students, sometimes teachers didn't have chance to implement a variety of methods suitable to the teaching objectives and teach individually.

REFERENCES

- Alison Doyle. (2017). *Development of fracture liaison services: What have we learned?*
- Gunduz, H. A. (2016). *Vaughn Elementary's innovative teacher evaluation system: Are teacher evaluation scores related to growth in student achievement?*
- Huyen, T., T (2003). *A Study of Teacher Competence Performance and Needs for Teacher Competence Improvement in Thaibinh Province, Vietnam, Master Thesis, Graduate School of Education, Assumption University, Thailand.*
- Irene, L. (2009). *Roles and responsibilities of teachers and teacher assistants.* Retrieved from <https://bctf.ca/uploadedFiles/Public/Issues/InclusiveEd/RolesAndResponsibilitiesTeachersTAs.pdf>
- Jan, Anglade. (2013). *Pre-instruction activities: Fun and engaging ways to welcome students.* Retrieved from

- <http://gatesol.org/resources/Documents/Pre-Instructional%20Activities.pdf>
- Kavinda, U. (2014). *“A study of teachers’ competence of two high schools in northern Rakhine state, western Myanmar”*.
- Medley, D.M (1977). *“Teacher competence and teacher effectiveness: A review of process-product research”*. Washington, D.C: American Association of Colleges for Teacher Education. Retrieved Form <http://files.eric.ed.gov/fulltext/ED143629.pdf>
- Nevzat, Y. (2009). *Developing presentation skills of student teachers through micro-teaching method*.
- OECD (2009). *Creating Effective Teaching and Learning Environments. First Results from TALIS*.
- OECD. 2011. *Chapter 4: Shanghai and Hong Kong: Two distinct examples of Education reform in China. In: Lessons from PISA for the United States: Strong Performance and Successful Reforms in Education. OECD Publishing. Paris, pp 83-115*
- Peng, J. (2014). *International Journal of Education Development 34*.
- Robert A. Barry, (2010). *Marylhurst University and The Chalkboard Project. Teaching effectiveness and why it matters*. Retrieved from <https://chalkboardproject.org/sites/default/files/teacher-effectiveness-and-why-it-matters.pdf>
- Sudirman, S.Pd. (2017). *Efforts to Improve Teacher Competence in Developing a Lesson Plan Through Sustainable Guidance in SMKN 1 Mamuju*. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1133109.pdf>
- Yu, J. (2010). *Dilemma and countermeasures in professionalization of rural teachers in China. Education Science Forum 3, 51-53*.