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Contents

An investigation of factors influencing English proficiency of Non-English Major students in China

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ABSTRACT

Although the fact that English language has been taught from primary school to university, the students who entered universities in China still have not acquired mastery of the language. It is important to investigate Non-English Major Students' perception what factors influencing their English proficiency, whether there are gender differences between male and female students. This thesis aims at investigating factors that influencing English proficiency of Non-English Major students in Chinese University. With the adopting of quantitative research, a total of 300 samples comprise were obtained from Henan Polytechnic University. The research findings revealed the Motivation to learn English of Non-English major students in Henan Polytechnic University is the most important factor contributing to their English language proficiency. The hypothesis testing results indicated that the female students' perception of factors they considered important to English language proficiency is greater than male's perception.

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1. Introduction

In the last three decades or so, English language has been gaining importance and popularity at an accelerated rate in the People's Republic of China (PRC). There has been a clear recognition of English language as an important resource that the nation can harness in its drive to modernization (Cortazzi & Jin, 1996). English is perceived as a key to promoting international exchange, acquiring scientific knowledge and technological expertise, fostering economic progress, and participating in international competition (Ross, 1992). Because of the importance English has accrued in relation to the nation's rapid modernization and economic development programmes, English language teaching (ELT) in schools and colleges has received a great deal of attention in China. The traditional approach to ELT in China has been a curious combination of the grammar-translation method and audio lingual method, which is characterised by systematic and detailed study of grammar, extensive use of cross-linguistic comparison and translation, memorisation of structural patterns and vocabulary, painstaking effort to form good verbal habits, an emphasis on writing language, and a preference for literary classics. The approach has its roots in, and has drawn strong support from, the Chinese culture of learning, hence its popularity among Chinese teachers and learners (Hu, 2001). The approach, however, has failed to develop an adequate level of English language proficiency among school and college students in China.

Most Chinese students begin their study of English language from the primary school, some even from kindergarten years (Ren & Bai, 2016). Despite the fact that English language has been taught from primary school to university, the students who entered universities in China still have not acquired mastery of the language.

The total number of Non-English major students is approximately 34,610,000 and the total number of English Major students is approximately 1,000,000 in all Chinese university. Only Foreign language major students gain the professional practice in listening and speaking in Chinese university. Non-English major students only pay attention to College English Test 4 (CET-4) results, due to requirement of graduation from college and employment. The Non-English Major student forms majority of the students who leave the university, they leave the universities and colleges without having acquired a good working knowledge (written and spoken) of English. Given this background in English proficiency of Non-English major students in Chinese universities, the focus of this research study is to investigate potential factors that aid or impede the development of English proficiency among Non-English major students in a Chinese college of higher education in Henan province of China.

The problems related to English language mastery of students entering universities have been investigated by many researchers in China (Sun, 2014; Yun, 2014; Wei, 2016; Zeng, 2003; Ren, 2012). Among the areas investigated include motivation, language aptitude, anxiety, self-esteem, individual character, learning preference and intelligence (Sun, 2014). Perhaps there is a combination of factors that, influence English proficiency of Non-English major students instead of single factors such as motivation or learning strategy.

2. Literature Review

Motivation is a kind of power to inspire, maintain and make the behavior point to a specific purpose. It is an explanatory concept, used to explain that why individual has this or that behavior. In traditional psychology, it is believed that motivation is the reflection of the internal driving force such as instincts, willingness and mental force, or caused by stimulus and reinforcement, and is generally understood as the static state of mind. Gardner (1985a) has proposed

that motivation refers to the desire to achieve the goal of learning a language as well as the efforts made to achieve the goal and a good attitude towards learning language. To some extent, learning motivation has impact on the language learning and is a key factor which may dominate the success or failure in second language acquisition (Chang & Lehman, 2002).

Language learning strategy refers to the processes and action that are consciously utilized by language learners to help them to learn language more effectively (Cohen & Macaro, 2007). O'Malley & Chamot (1990) stated language learning strategies as the specific thoughts or behaviors which students adopt to serve them to understand, study☐or obtain new information. Oxford (1989) believed language learning strategies as particular action that learners take so as to get language learning easier, quicker, more self- oriented and more interesting.

Beliefs about language learning was taken to be the students' feeling or emotion towards the English language and the culture of the English-speaking people. To be more specific, it is what they think of the language and the people who use the language as their first language. According to Lu (2013) college students' learning beliefs is a multidimensional structure, which is based on the beginning of knowledge, including essence beliefs and motivated beliefs of the subjective beliefs in the whole system. Schommer (1994) studied that the learning belief has an effect on learner's information processing system and learning achievements.

The concept of Cognition which was introduced by Flavell (1979) and Alcı and Altun (2007) refers to students' awareness of their own thinking procedures and their control on these procedures. This concept includes individuals becoming aware of their own knowledge, managing to control that

during the learning process and regulate it when necessary. It is conducted that the English language cognition includes individual view, learning behaviors and learning strategies.

According to Adigüzel & Orhan (2017), individuals who have cognitive behaviors are very successful at performing actions such as planning what to study, choosing the sources, defining the roles, distributing those roles and dividing duties among the group members (Tonbuloğlu & Aslan, 2013). Furthermore, such individuals are good at foreign linguistic skills, gathering their attention, keeping things in memory and the social interactions (Iwai, 2016). Language learning Cognition is of importance for language-learning achievement. Because learning process for language learners include too many novelties, unknown rules, surprising rules, different writing systems, unexplainable social customs and unconventional instructional approaches. Amidst such great number of new concepts, students lose their focuses and compensate this drawback using such cognitive strategies as attention focusing or association between the known and the unknown (Adigüzel & Orhan (2017).

3. Methodology

The research was conducted by using a non-experimental quantitative research design that used a questionnaire survey. The aim of this survey is to identify factors that influence English language proficiency of Non-English Major students in Henan Polytechnic University. A 60-item questionnaire developed by (Chou, 2007) was adapted for this study and was used to collect quantitative data.

These 300 respondents were selected from 3 separated faculties from a total of 19 faculties in Henan Polytechnic University. Out of the 300 students who

took part in this study, 163 were male students, accounting for 54.3 percent. The rest of 137 students were female students.

4. Findings

The researcher analyzed the data by SPSS using descriptive analysis and T-test. The English proficiency of Non-English Major students is measured as the results of CET-4.

4.1 Descriptive Statistical Analysis

The data shows show that that the CET-4 results of female (137) and male (163) students. There were 27 female and 14 male students in the High group; 53 female and 67 male students in the Moderate group and 57 female students and 82 male students in the Low group (Table 1).

Table 1: *Distribution of CET-4 Results by Gender*

Gender	N	High	Moderate	Low
Female	137	27	53	57
Male	163	14	67	82
Total	300	41	120	139

Note. N=Number of respondents

Based on the findings (Table 2), students rated motivation to learn English as the highest in perceived importance (M=3.83, SD=0.737). The mean and

standard deviation of the English Learning Cognition scale was (M=3.79, SD=0.688). The mean and standard deviation of the Belief about Learning English scale was (M=3.78, SD=0.742). The mean and standard deviation of Learning Strategies scale was (M=3.66, SD=0.784).

Table 2: *Distribution of Mean, Std. Deviation and Number of Items*

Factors	N	Mean	Std.Deviation
Motivation	5	3.83	0.74
English Learning Cognition	6	3.79	0.69
Belief about English Learning	5	3.78	0.74
Learning Strategies	10	3.66	0.78

Language learning motivation refers to the desire of students to learn a foreign language and the driving force of learners, it is the catalyst in many individual factors for language learning, and is also one of the most important factors to successful language learning. The influence of motivation in language achievement is clear and proves that motivation is a determinant factor in achieving proficiency in a second or a foreign language. Zhang (2015) indicates that language learning motivation is one of vital factors which strongly correlated with the success in second language acquisition. Motivation can sustain students' desire to accomplish learning tasks and generate new desire to start further learning. When learners are motivated, they internalize the need for learning and develop a self-urge towards learning. (Makewa, L. N., Role, E., & Tuguta, E, 2013). Also, Yamashiro and Mclaughlin (2001) replicated the study in Japanese EFL contexts and concluded similarly that motivation had significant influence on language proficiency. In the literature, it is reported that there are many factors which influence English language learning such as attitude, motivation, classroom

activities, family environment and learning resources (Makewa & Ellen Tuguta, 2013). Although there are other factors which contribute as well, motivation is the most relevant and determinant since as some researcher (e.g. Masgoret and Gardner,2003 and Dornyei, 1990) prove, motivation variables is the one which contributes higher with language achievement. The tremendous influence that motivation has in language achievement is one of the reasons why researchers pay so much attention to develop motivation tasks and strategies that can help learners feel more motivated and enthusiastic to learn a language (Fernández, 2013).

The second highest mean score was observed for English language cognition (M=3.79, SD=0.688). English language cognition refers to what learners know about language learning. It is a prerequisite to self-regulation and helps learners to actively participate in their performance rather than be a passive recipient of instruction. English language cognition is important for language-learning achievement (Adıguzel and Orhan, 2017).

The third highest mean score and standard deviation was observed for the Belief about Learning English scale (M=3.78, SD=0.742). The Belief about language learning refers to opinions or views held by people about language learning. The beliefs considerably impact on both the progress and success of any learning activity, as well as exerting a direct influence on English achievement. It has been found that the students' English learning beliefs is generally a strong influencing factor of English achievements (Ren and Bai, 2016).

The fourth highest mean score and standard deviation was observed for Learning Strategies scale was (M=3.66, SD=0.784). Language learning strategies refer to the processes and action that are consciously utilized by

language learners to help them to learn a language more effectively. Oxford (1990) has found that learning strategies are of great importance, especially for language learners because they enhance active, autonomous involvement in language learning process and this is important for developing communicative competence, which is the ultimate goal of language classes. Also, Oxford (2001) explicitly suggests that language learning strategies is among the key factors in determining the quality of student learning in second (L2) and foreign language. It is assumed that the students who have employed certain strategies would report better language achievement (Setiyadi, Sukirlan, & Mahpul, 2016). Fewell (2010) indicates that language learning strategies are thought to be an "effective and workable" (p. 159) factor in language learning process among other important factors affecting L2 acquisition because they are controllable and it is possible to manipulate and manage strategies in order to improve language learning.

In conclusion, this analysis shows that language learning motivation is most important factor that contributes to English proficiency of sophomore Non-English Major students in Henan Polytechnic University.

4.2 Inferential Statistics Analysis

Table 3

Distribution of Means, Standard Deviation, t-value and p-value of the Sample of Female and Male Students with Respect to the Five Factors.

Factors	Students (N: 300)	Mean	SD	t	p
Learning Strategies	Female(N=137)	3.79	8.02	-2.47	.014*
	Male(N=163)	3.56	7.57		

Belief about learning English	Female(N=137)	3.92	3.76	-3.09	.002**
	Male(N=163)	3.66	3.54		
Motivation	Female(N=137)	3.92	3.61	-2.83	.005**
	Male(N=163)	3.72	3.67		
English Learning Cognition	Female(N=137)	3.93	4.11	-3.52	.000***
	Male(N=163)	3.67	4.00		

* p<0.05,**p< 0.01, ***p<0.001

The results of the analysis show that there are statistically significant differences between male and female students in their perception of factors influence English proficiency of female and male students in Table 3.

In the Learning Strategies scale, the mean score of female students (M=3.79, SD=8.02) was statistically significantly higher than that of male students (M=3.56, SD=7.57; t (298) = -2. 47; p<0.05, two–tailed). In the Belief about learning English scale, the mean score of female students (M=3.92, SD=3.76) was statistically significantly higher than that of male students (M=3.66, SD=3.54; t(298) =-3.09; p<0.01, two–tailed). In the Motivation scale, the mean score of female students (M=3.92, SD=3.61) was statistically significantly higher than that of male students (M=3.72, SD=3.67; t(298)=-2.83; p<0.01, two–tailed). In the English Learning Cognition scale, the mean score of female students (M=3.93, SD=4.11) was statistically significantly higher than that of male students (M=3.67, SD=4.00; t(298)= -3.52; p<0.001, two–tailed).

The results of the study show that the perception of female students with respect to four factors, Learning Strategies, Belief about Learning English, Motivation and English learning Cognition were statistically significantly higher than that of male students. These results suggest that female students' perceived that the Learning Strategies that they used to study English language made a significantly higher contribution to their English language proficiency than male students. According to the results, female student's perceived that Belief about Learning English contributed significantly to English language proficiency. Moreover, female students also perceived that motivation to learning English contributed significantly to English language proficiency. Female students' perceived that English Learning Cognition significantly affected students' English language learning.

Similarly, in the literature, most of the research done on the impact of gender differences on learner motivation indicate that females are more motivated and hold more favorable attitudes towards EFL learning than males (Ahåt, 2013; Sugimoto, Rahimpour, & Yaghoubi−Notash, 2006). Girls have been found to be more interested in cultures and the people of the target language community than boys in most of EFL learning context (Wang, 2008; Mori & Gobel, 2006). According to Li (2015), females report higher level of intrinsic motivation than male students and there is significant gender difference between them. Also, it is reported that there are significant differences of using learning strategies to learn English between male and female students. (Ren, 2012)

As a consequence, female students' perception of four factors influencing their English proficiency is significantly higher than that of male students. Compared with male students, female students believe the Learning Strategies, Motivation, Belief about learning English and English learning Cognition are important factors that influence their English language proficiency.

5. Discussion and Conclusion

The study revealed that the language learning motivation is the most important factor contributing English language proficiency. With respect to the motivational factors, the Henan Polytechnic University authorities and English teachers could explore different way of motivating Non-English Major students to learn English. The authority and teachers could explore ways to encourage these students to revise their English lessons, and how to improve their writing skills. This is necessary to tackle some of the problems found among students in this study, particularly on how to motivate them to improve their English proficiency. This could be achieved by giving them more exercises and assignments on writing, speaking, listening and reading in English. English teachers should encourage students to manage their own learning by guiding students to choose what kind of learning task and to make the individual learning plan. They give students the direction of the task and encourage students to actively participate in various activities. When students are confused in learning, teachers give students some advice about what to do next, and the decisions are made by students themselves.

What may also be profitable for the teachers to do is to further exploit the students' intrinsic motivation to learn English. This can be done by the contextualization of exercises and other classroom activities so that English is practiced in situation that realistically reflect the use of it in the world outside. In this way, the teacher could stimulate and sustain the students' interest in learning English and so increase their intrinsic motivation.

In this study it was found that there were gender differences in the students' perception of factors that affect English language proficiency of Non-English major students. Obviously, the male students should be paid more attention to teaching English. Teachers should also give more different and suitable exercises and assignments to different gender students. The gender difference

towards learning English language will bring challenge to English teachers and motivated them to enrich the method of teaching in Chinese universities. More opportunities should be made available to the male students to use particularly more English in their daily communication with teachers and friends in order to increase interests of learning English.

With respect to gender difference, female students perceived that Learning Strategies, Belief about Learning English, Motivation and English Learning Cognition were more important in acquiring English language proficiency than that of the male students. This finding has teaching and learning implications for language instructors at the Henan Polytechnic University.

Further research is deemed necessary to help explain more the findings of this research. This study only involved 300 respondents as sample. Other researches using larger samples including those from other Universities in China would perhaps be useful to further verify or negate the findings of this study. Although the Henan Polytechnic University is a comprehensive university, it is not representative of all Chinese Universities. Findings would be more representative and authoritative if more universities will be chosen to research in further study.

The researcher in this study focused on the factors influencing Non-English Major students in general and did not explore the background of students deeply. The lack of background information about respondents such as the faculties they represented, whether they are cities or rural dwellers would have provided more information about the difficulties they faced in learning English.

According to Chandrasegaran (1979), there is indeed a need for further

research into the strategy of approaching English language as a system, particularly into the efficacy of the processes of verification, monitoring and inductive/ deductive learning. However, the most effective way of observing these learning processes, and of gauging the amount of learning they produce, is probably through highly controlled studies, followed by observation with the respondents involved. Interviews may be more effective, since it may not suffice to only use the linguistic output to predict the learning strategies employed. Interview may also allow the researcher to investigate the learner's mind and determine if the learning strategy, for example, actually contributes to the students' level of performance.

Finally, many studies about factors influencing students' English proficiency have investigated for many years (Chen, 2015; Sun, 2014; Yun, 2014). It is recommended that future studies explore the factors like language aptitude, anxiety, self-esteem, self-efficacy and attitude and these together are related to students' English proficiency.

References

Adigüzel, A., & Orhan, A. (2017). The Relation between English Learning Students' Levels of Self-Regulation and Metacognitive Skills and Their English Academic Achievements. *Journal of Education and Practice*, **8(9)**, 115–125.

Ahåt, R. (2013) Motivation,gender, and learner performance of English as an L3 in the Xinjiang Uyghur autonomous region. *English Language Teaching*, .**6(9)**, 158–167.

Alcı, B. and Altun, S. (2007). Do High School Students' Mathematics Self-

Regulation and Metacognitve Skills Differ by Gender, Grade Level, and Branches. Ç.U. *Journal of Social Sciences Institute*, **16(1)**, 33-44.

Chandrasegaran, Antonia. (1979) Problems of learning English in national schools in Johor, Malaysia: an investigation of attitudinal-motivational variables, learning strategies and exposure to English, University of Singapore.

Chang, Mei-Mei., & Lehman, D. J. (2002). Learning foreign language through an interactive multimedia program: an experimental study on the effects of the relevance component of the ARCS model. *CALICO Journal*, **20(1)**, 81-98.

Chen, X. (2015) Factors influening English proficiency of Non-English majors-A case study of yili Normal University.

Chou, C.T., (2007) Factors Affecting Language Proficiency of English Language Learners at Language Institutes in the United States.Texas Woman's University, Texas, United States.

Cohen, A., & Macaro, E. (2007). *Learner Strategies*. Oxford: Oxford University Press.

Cortazzi, M., and Jin, L. (1996) English teaching and learning in China. *Language teaching*, 1996, **29(2)**: 61-80.

Dörnyei, Z. (1994) Motivation and motivating in the foreign language classroom. *The Modern Language Journal, .***78(3)**, 273-284.

Hu, G.W. (2001) English Language Teaching in the People's Republic of China. Country report for the Six-Nation Education Research Project on Pedagogical Practices in English Language Education. National Institute of Education, Nanyang Technological University.

Iwai, Y. (2016). Promoting Strategic Readers: Insights of Preservice Teachers' Understanding of Metacognitive Reading Strategies. *International Journal for the Scholarship of Teaching and Learning,* **10 (1)**, 123- 163.

Fernández Orío, S. (2013) Motivation and second language acquisition. [D] Graduate studies' dissertation: Universidad de La Rioja.

Flavell, J. H. (1979). Metacognition and Cognitive Monitoring: A New Area of Cognitive Developmental Inquiry. *American Psychologist*, **34 (10)**, 906-911.

Fewell, N. (2010) Language learning strategies and English language proficiency: An investigation of Japanese EFL university students. *TESOL Journal*, **2**, 159-174

Gardner, R. C. (1985). The attitude/motivation test battery: Technical report. Ontario, Canada: University of Western Ontario, Department of Psychology.

Li, H. (2015) On guidelines for College English teaching and challenges for College English teachers. English language teaching

Lu, Lijun (2013). An Empirical Research on Learning Beliefss of College Students in China, Doctoral thesis, Xiamen University, Xiamen, China.

Makewa, L. N. E. R., and Ellen Tuguta. (2013) Students' Perceived Level of English Proficiency in Secondary Schools in Dodoma, Tanzania. *International Journal of Instruction,* **6(2)**, 53–66.

Masgoret, A.M. and R.C. (2003) Gardner. Attitude, Motivation and Second Language learning: A Meta-Analysis of Studies Conducted by Gardner and Associates Advanse in Theory, *Reasrach and Applications.Ed.Dornyei,Z Malden(USA) Blackwell*. 167-210

Mori, S., & Gobel, P. (2006) Motivation and gender in the Japanese EFL classroom. *System,* 2006.**34**, 194-210

O'Malley, J. M., & Chamot, A. U. (1990). *Learning strategies in second language acquisitions.* Cambridge: Cambridge University Press.

Oxford, R. L. (1990) Use of language learning strategies: A synthesis of studies with implications for strategy training. *System* **17(2)**, 235-247.

Oxford, R. L. (2001) *Language learning styles and strategies. In M. Celce-Murcia (Ed.), Teaching English as a second or foreign language* (pp. 359-366). Boston, MA: Heinle&Heinle.

Ren, H., & Bai, Y. (2016) A Study of the Relationship between Learning Belief and English Achievement of Chinese English Major College Students. *[J] Journal of Education and Practice*, 7**(14)**, 99–103.

Ren, S. (2012) Research on the Relationship of Language Learning Strategies and CET4 Achievements of Non-English Majors.

Ross, H.A. (1992) Foreign language education as a barometer of modernization. In R. Hayhoe (ed.) *Education and Modernization: The Chinese Experience*. (pp. 239–54).

Schommer, M. (1994) Synthesizing epistemological beliefs research: Tentative understandings and provocative confusions. *Educational Psychology Review,* **(6)**, 11-23.

Sugimoto, T., Rahimpour, M., and Yaghoubi−Notash, M. (2006) Exploring the role of attitude, motivation and gender in EFL learning.*The Seijo University Arts & Literature Quarterly.* **197**, 138–154.

Sun, D. (2014) A Study on the Relationship among English Learning Motivation, Learning Strategies and Language Performance of Non-English Majors.

Tonbuloğlu, B and Aslan, D. (2013). The Effect of Project-Based Learning on Students' Metacognitive Skills and Self-Efficacy Perceptions and Project Products. *Mustafa Kemal University Journal of Social Sciences Institute*, **10**, 97-117.

Wang, F. (2008) Motivation and English achievement: An exploratory and confirmatory factor analysis of a new measure for Chinese students of English learning. *North American Journal of Psychology,* **10(3)**, 633–646.

Wei, G. (2016) An Empirical study on the correlation between college EFLlearner's Belief and English achievement.

Yamashiro, A. D., & McLaughlin, J. (2001) Relationships among attitudes, motivation, anxiety, and English language proficiency in Japanese college students. In P. Robinson, M. Sawyer, & S. Ross (Eds.), Second *language acquisition research in Japan: JALT applied materials series*. (**Vol. 4**, pp. 19–33).

Yun, M. (2014) A Study on the relationship among English learning Motivation, Learner Autonomy and English Learning Achievements for Non-English Major Undergraduates.

Zeng, S. (2003) An Analysis of Correlation between college English students'motivation and Their performances.

Zhang, J. (2015) Improving English Listening Proficiency: The Application of ARCS Learning-Motivational Model. *English Language Teaching*. **8(10)**, 1-6.

Impact of leadership style on employee performance in the Chinese state owned enterprise

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ABSTRACT

With the rapid development of economy in China, the economy has propelled the development of the enterprise; especially, private companies, they are pillar of labor market in china. Therefore, many Chinese state owned enterprises have also been reform and renewal. Under the new organization management model, the leadership more emphasis on employee's performance, Hence, the leadership styles ought to adapt to improve employee's performance, in this study, a quantitative method was used to design a questionnaire. The five-point Likert scale was used to determine the influence of leadership style on employee performance. SPSS software was used to analyze the questionnaire. Demographic analysis, normality test, reliability test (Cronbach s Alpha), descriptive analysis and regression analysis were presented. the significant relationship between democratic leadership style and employee performance, the positive relation the insignificant relationship between autocratic leadership style and employee performance. When the median value of democratic leadership style corresponds to the highest value of 3.784 and the standard deviation value is 0.8124, the second highest value of laissez-faire leadership style corresponds to 3.416 and the standard deviation value is 0.5858, and the lowest mean value of 3.404 and standard deviation value of 0.7330 corresponds to autocratic leadership style, indicating that autocratic leadership style is not related to employee performance. The regression coefficient analysis shows that

democracy has a significant positive effect on employee performance. the laissez-faire leadership styles is the second, The beta value of autocratic leadership style is -0.168, the significance value is 0.025, and the significance value is higher than 0.01, indicating that autocratic leadership style has a significant negative impact on employee performance. In this study will provide an effective leadership style to improve employee performance in the private company.

Key words: *Democratic leadership style, Autocratic leadership style, Laissez-faire leadership style, employee performance*

1. Introduction

The purpose of this study is meanly to discuss that the impact of leadership styles on employee performance in Chinese state owned enterprise, the leadership is the art of impacting people (Igbaekemen, 2014) so they are willing to achievement of goals, many people who believed that if only they could receive a title or given a position that would make them become a leader (Massi,2012) the leadership play a critical function in creating a positive working environment and culture in an organization, (Massi,2015) believed that effective leadership is able to facility members of an organization showing a good performance , according to (Skoogh(2014) it is exact say, since the dawn of history of human, the leadership has played a vital role in an organization. Many companies strive to seek a great leader who can lead them on the successful road, therefore the researchers always pay an effort to find the excellent leader and who are how to operate, Hence, a lot of leadership theories had been developed over the year. Lewin's Leadership Style discovered three divers of leadership styles, democratic leadership style, autocratic leadership style, and laissez-faire (Billig, 2015).

Hersey and Blanchard (1969) made a kind of leadership theory, now called situational theory, Burns (1978) developed transformational theory, which theory emphasis on measuring the leader how to handle the value of approach power, after then Bass(1985) transformational leadership theory concentrated on the leaders how to influence follower by his /her qualities and skills. the important of leadership has been discovered, which shown on the developed countries and developing countries (Babatunde, 2015) however, Lewin's leadership style is an important problem, In China, similar part of studies have also been conducted (ChenXinLi, 2015). In China, especially employees work on the state owned enterprise (SOE), they are performance always not good, the deficiency flexibility, ineffective, and bureaucracy (Chow,2013).

Leadership is very important for the state owned enterprise, they control the most authority and power, regulations of enterprises are set by the leaders, they are the extremely decision makers. On the many state owned enterprises, employees must obey the order by leaders, the employees are unable to express difference of points, because leader is a decision maker, they only consider how to make orders, less think about this order whether effective or produce good impact on the enterprises or not (ChengHong,2014). Hence, anger and hostility of employees fail to change anything, the worst as many employees are changed by leaders, the employees are willing to depend on the order of leaders, even lost their values and soul. (FongHui,2013).

In this study mainly discuss different leadership styles (autocratic, democratic and laissez-faire) and their how to influence employees performance in an organization, when the study finish, this study will help employees to identify which leadership style is positive for them in terms of job satisfaction and the success of their career path way, while, this study also can help leader to know which leadership is good for employees, and how to motivate employees by right way, it will improve state own enterprises, in China, assisting

company to get excellent leaders that can enhance performance of company rather than autocratic leadership style , the role of leader is not only make order, they ought to know how to promote development of an organization.

Research Objectives

(1) To examine the impact of Democratic Leadership Style on Employee Performance

(2) To examine the impact of Autocratic Leadership Style on Employee Performance

(3) To examine the impact of Laissez-Faire Leadership Style on Employee Performance

2. Literature Review

(cited in Ali, 2012) defined leadership is an interpersonal influence, through the communication process and quality of the leaders to attainment of the goals. According to study the leadership is guide a group of people to complete one goal. (Yukl,2008) defined the leadership is a via relationship, structure and guide to influence the process of a group of people.(Gharibvand,2012) defined leadership is how to build a group communication and contact, the leaders how to encourage and coach subordinates, leadership how to make benefits for the group members. The democratic leadership is influence people in a manner consistent with the basics of democratic principles and processes, they advocate equal, tolerance and self-determination, democratic leaders are willing to motivate people expressing different perspectives, through diverse points to select a best way as their decision (Choi, 2012).

In accordance to Khan, et al. (2015), the autocratic leadership is keep more

authority and power of decision, they are center of an organization or group, they do not allow others with power, and then they refuse any different opinions from employees (Akor, 2014)□the trait of autocratic leadership is an" I tell " philosophy, autocratic leadership only tell people what to do, (Nwankwo,2001) described autocratic leadership is a leadership style, they even always ignored other's benefits to achievement their own goal, any decisions by them made.

(Deluga,1992) proclaimed that the laissez-faire leadership style is related to the unproductiveness, ineffectiveness. laissez faire leaders are unwilling to make decision, no feedback for their employees (Mister,2012) laissez-faire leadership is a term of inactive form, the character of unwillingness to be involved the group, in fact, the best leaders are from group rather than go away the group (Eeden,2011).defined three classical styles of leadership in decision making: autocratic, democratic and laissez- faire. the democratic leadership believed group participation and majority decisions, the autocratic leadership cannot accept other perspectives, the employees must be obedience, however, Laissez-faire leadership style less make a decision and take part in group activities (Gastil,1994).Situational leadership originally was developed by (Hershey,2011) describe the leadership styles and emphasis the need to connect leadership style to the maturity level of the followers (McCleskey, 2014), the successful leaders ought to alter leadership style basic on the detail of task and the maturity of their group members as well as having a rational understanding of a situation.

(Law,2015) conduct research the effectiveness of department leaders to employee's performance on a domestic company, the sample size used is 200, Survey questionnaires were designed to study the effects of leadership styles on employees performance. 200 respondents were selected from company in Beijing China, via random sampling with Slovin formula wit n =

N/(1+Ne2). Data were analyzed by using weighted mean, percentages, multiple regression and correlation coefficient. Percentages were used to analysing demographic variables (gender, age, length of service and leadership styles). Weighted mean was used to survey questionnaires on leadership styles, and correlation coefficient and multiple regression were used to study the relationship between variables on leadership style, employees performance The finding concluded that corporations should constantly improving leadership style which enhances employees performance even there is still spaces for improvements. This research consists of primary and secondary data. Primary data was collected through Multifactor Leadership Questionnaire (MLQ) Secondary data was collected from the office employees of employee performance. Validity and reliability test were used to measure the quality of data. Data was passing the classic assumption tests such as multicollinearity test, normality test, heteroscedasticity test before multiple regression analysis. The result claimed that democratic leadership style has significant relationship with employees' performance.

(Chuang,2014) did research on the relationship of leadership styles and organizational performance among leaders in a state own enterprise in China. The study used correlation methods to measure the relationship between leadership styles and organizational performance. 150 employees were selected as the sample size. The questionnaire prepared in a form of closed-ended questions. Cronbach's alpha is used to test reliability. The result concluded that leadership behaviors are interrelated and have good impact with organizational performance. (Chok,2011) worked on a research titled Interaction between Leaders and employees as an Antecedent of Job Performance: An Empirical Study in China. Sample size used by the researchers is 150. This study used integrates the research literature, pilot study and the actual survey to collect data. Sampling technique was used. SPSS is used to analyses validity and reliability of data.

Based on the variety of studies, in this study adopt several variables to measure employee performance, Democratic leadership has been adopted as an independent variable (Anwar, 2015). Autocratic leadership was also adopted as an independent variable, Laissez- faire leadership was also adopted as an independent variable (Haider, 2015;). Employee performance is dependent variable (Malik, 2014).

Independent variables   **Dependent variable**

| Democratic leadership style |
| Autocratic leadership style |
| Laissez-faire leadership style |

| Employee Performanc |
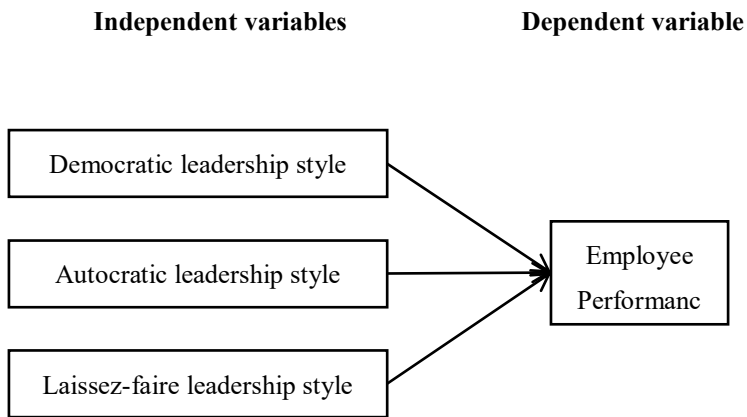
Figure1: Conceptual framework

This is a type of encourage, teamwork and creative which can produce effective job performance and productivity, autocratic leadership do not consider about benefits of the public and employees, they are very selfish, the democratic leadership make no suggestions, but they will enquire the advice of others, they are always open mind and allow different piece of opinions.

(Verba,2015). One of the major benefits of democratic leadership style is that built a whole process to achievement their goal, on the process encourage team members involved and made decision. (Armstrong,2014)

The role of democratic leadership is to motivate and invite group members in the final decision, but the ultimate power relies in the hands of leaders, they are support and guide the team what to do, how to communicate with employees, how to give a good suggestions to their subordinates (Skogstad, 2015).

H1: Autocratic leadership style has positive significant impact on employee performance

Autocratic leadership is that they make the decision without group members agreement, they do not think this is a wrong way, which may result in risks, because the decision maybe not correct, they deficient in more information , while, the employees and team members have few opportunities to express different opinions, though some good advices their leader may also reject (Amanchukwu, et al., 2015). The choice of autocratic leadership on the basis of their judgment and ideas, rarely include the opinion of followers, autocratic leadership control whole group or an organization, when they make orders, who never try to explain reasons to their employees or followers, they are very confidence, because they never responsible for the organization .There is only power in their consciousness (Zareen, et al., 2015).

according to previously researcher claimed that Chinese companies need to change the management of old idea, many companies think that leader is a pillar of the group or organization,, autocratic leadership may not cultivate

more excellent intelligences, because most of good employees are unable to suffer concentration of power of their leaders, thus autocratic leadership may not provide more helps for the groups, this situation is not suitable for the current Chinese companies in this way should oust from organization,(PengZhen,2014)

H2. Democratic leadership style has positive significant impact on employee performance

Democratic leadership try to know the problem of employees and find the problem with employees, they work on solution, after than they will listen the suggestions from the group or followers, when they make ultimate decision usually made together with team members Iqbal, et al. (2015).

H3. Laissez-faire leadership style has positive significant impact on employee performance.

Laissez-faire leadership, most of the time, the employees performance rely on the ability of team members, the team members have chance to make decision, leader allow their subordinates make decision, however, some researcher claimed that the Laissez -faire leadership can improve job satisfaction of employees, but if leader do not involved the team they do not have chance to do encourage subordinates, even they do know the course of the team, which will result in ineffective work or harms for the group interests Eze, H.C. (2010).

3. Research design and methodology

Research Design

In this study need to research the influence of leadership style on employees' performance, the explanatory research design involved formulating the hypothesis and collecting the information on this basis that leads to achievement of the objectives of the research. The researcher needs to measure the performance of different leadership styles, therefore quantitative method is first choice, because quantitative method is suitable for this research and will help researchers to analyze data and determine the impact as per the objectives defined.

Data Collection

The Likert scale follows the format of: 1) Strongly Disagree; 2) Disagree; 3) Neither Agree nor Disagree; 4) Agree; 5) Strongly Agree. The development of the questionnaire was based on the following variables; democratic leadership, autocratic leadership, laissez-faire leadership and employee performance. (McLeod, 2008).

4. Data Analysis

This study conducted data Analysis Quantitative approach; SPSS is the software used in analyzing the collected data to gain meaningful conclusions. SPSS will help to analysis data analysis, normality test, reliability test, descriptive analysis and regression analysis determine the impact of leadership styles on employee performance.

Reliability Test

The criteria of Cronbach s alpha for establishing the internal consistency

reliability is: Excellent (α>0.9), Good (0.7<α<0.9), Acceptable (0.6<α<0.7), Poor (0.5<α<0.6), Unacceptable (α<0.5).

Table 1: Cronbach's Alpha

Variables	Number of items	Cronbach's Alpha
Overall	18	0.809
Democratic leadership	4	0.900
Autocratic leadership	4	0.578
Laissez-faire leadership	4	0.542
Employees performance	6	0.820

Based on the table, the overall Cronbach s alpha value is 0.809. This shows that data have a significant reliability in internal consistency. Democratic has the highest value in Cronbach s alpha (0.900). This shows the highest reliability in internal consistency of 4 questions. Autocratic has poor Cronbach s alpha value (0.578) which means that the data is ineffective reliable. Laissez-faire has the lowest Cronbach s alpha value (0.542) which shows the data has also poor reliability. The employee performance in Cronbach s alpha value is 0.874 which means that data is highly reliability in internal consistency.

Table 2: Summary of hypothesis

Hypothesis	Beta Value	Sig.	Result
H1: Democratic leadership style has a positive significant impact on employee performance.	0.581	0,000	Accepted
H2: Autocratic leadership style has a positive significant impact on employee performance.	-0.168	0.025	Rejected
H3: Laisses-faire leadership style has a positive significant impact on employee performance.	0.241	0.003	Accepted

5. Conclusion

Based on the results, democratic leadership style can sharpen employee's wit, it also can banish employee's shyness, it will enhance their timing and the democratic leadership would build a good relationship with subordinates, making their attitude will go in a positive direction and this is pivotal in employee's performance. The democratic leadership has significant positive impacts on the employee's performance. This indicates that when adopt to democratic leadership, the employees performance would improve. Thus, Chinese leaders are encouraged to adopt a democratic leadership style and manage employees and organizations, inviting and motivating employees involve the process of decision, providing more opportunities of learning for employees, the performance of employees is the best under this style of leadership. Chinese leaders ought to incite employee's innovation, team work and creativity, building a platform for employees to show their ability. That

leads to job satisfaction, increased their productivity and subsequently increased employees performance.

Autocratic leadership is a fail way of the management, the essence of business management is to get good work result by other people, rather than only one leader, however, autocratic leadership does nothing to satisfy this condition and they do not allow different points, which may not help Chinese company to get good performance in the future. Autocratic leadership style has been exist long time in China, but now most of employees no longer like to this style of leaders, moreover, autocratic leadership style maybe refused by employees, because the ability of employees would cover under the autocratic leadership, even occurring unfair and discomfort, Let's face it, autocratic leadership style may not produce more productivity, it dilute employees' talent, even it distracts leader from their purpose, And it distracts from leader's best efforts, Hence, Actually, autocratic leadership style both negative influence in employees 'performance and leader's behaviours, because they always ignored ideas of employees, this relationship between leader and employee may sap leader's energy all the time, In the long run, a negative management cannot influence employees performance in a positive direction.

Laissez-faire leadership style has good impact on employee performance, Laissez-faire leadership styles considered as moderate leadership style, Laissez-faire leadership needs its employees to be responsible, knowledgeable, skilled and time management, Laissez-faire leadership may suitable for the team, however, in China, this style of leadership may not suitable for employees development, many employees in Chinese company they more need to coach, practice on their workplaces.

6. Recommendation

Organizations need to have highly capable leaders to lead their employees in daily operation and accomplish the organizational goals. Based on this research, democratic leadership style has significant good impact than laissez-faire leadership and autocratic styles in terms of employee performance. Importantly, democratic leadership style is a positive relationship between leaders and employees, they tender with employees, whilst, they be good at seek benefits of employees and emphasis on development of employees by real tasks. In order to stay in the competitive business environment, we recommended that the right leader with high capability be managed at all kinds of levels of the organization, especially Chinese state owned enterprise, are pivotal role in China. Thus, the organization ought to use the right leadership style. Organizations in China should adopt democratic leadership instead of autocratic leadership style. It should be known that employees are the most important asset in the organization; employee competence and performance highly or not which depend on the leadership style. Organizations with good leadership capability will further improve performance, the good leaders who know how to encourage employees via the real way, how to test employees, and how to find the gap of employees, the next step is how to remedy the gap, in fact, through the former articles of research, employees performance up or down which related to relationship between leader and employee. Democratic leadership may more produce positive relationship, whereas, autocratic leadership style could not perception of leader effectiveness, Hence, the democratic leadership style would further improve employees performance in Chinese companies.

References

Amanchukwu, et al., (2015). Impacts of Leadership Style Effectiveness of Managers and Department Heads to Employees Job Satisfaction and Performance

Akor (2014). Influence of Autocratic Leadership Style on the Job Performance of Academic Librarians

Babatund (2015) Organizational Leadership in High Growth Asia, 109-123

Bhatti, N. et al., (2012). The Impact of Autocratic and Democratic Leadership Style.

ChenXinLi (2015). Organizational Leadership and employees work on the state owned enterprise

Choi (2012) Democratic Leadership: The Lessons of Exemplary Models for Democratic Governance. International Journal

Chow (2013) Leadership Style and Perception of Effectiveness: Social Science, 5(2),

Chuang (2014) the relationship of leadership styles and organizational performance among leaders in enterprise, China.

Eden (2011) Leadership styles and organizational commitment: African Journal of Marketing Management, 1(6)

Eze (2010). Leadership in an organization. Journal of Institute of management, 46 (1), 29-35

Gastil (1994) A Definition and Illustration of Democratic Leadership. Human Relations, 47(8)

Gharibvan(2012) The Relationship between Organizational Culture, Participative Leadership Style, and Employee Job Satisfaction. International Journal of Business and Social Science, 3(16)

Hershey (2011) The Relationship between Leadership Styles and Employees Job Satisfaction

Igbaekemen (2014) impact of Leadership Style on Organization Performance: A Strategic Literature Review. Research, 4(9)

Khan, et al., (2015), The Styles of Leadership: A Critical Review. International Institute for Science, Technology and Education (IISTE),

Law (2015) Employees performance on a domestic environment

Massi (2012) Journal of Relationship between Leadership Styles and Employee 30-33

McCleskey (2014) The Impact of Leadership Style on Employee Motivation

Mister (2012) Effect of Leadership Style on Employee Performance.

Skoogh (2014) The Impact of Leadership Style on Employee s Performance
in an Organization.

Zareen, et al., (2015). Elements and problems of democratic leadership

The Survey on Teacher's Mathematics Teaching Belief in selected Kindergartens in Nanjing City, China

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ABSTRACT

Based upon a review of literature, anthropologists, social psychologists, and philosophers and educationists have agreed upon a commonly accepted definition of beliefs; "beliefs are thought of as psychologically held understandings, premises, or propositions about the world that are felt to be true" (Richardson, 1996, p.103). In educational settings, Haney et al. (2003) defined beliefs as "one's convictions, philosophy, tenets, or opinions about teaching and learning" (p. 367). The beliefs that teachers hold are considered to be important as teaching belief tend to influence a teacher's classroom practice. This study aims to examines mathematics teaching beliefs of selected kindergartens teachers in the Nanjing city of China with a view to understanding what beliefs teachers hold. The data of this study were collected through questionnaire and interviews. The questionnaires were distributed to 300 teachers from the 14 randomly selected kindergartens in the urban Nanjing District. The findings of this study will contribute to widening the pool of knowledge about Chinese teachers' educational beliefs and in particular their beliefs with respect to students' learning mathematics in preschool.

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Keywords:*Teacher's Teaching Belief, Kindergarten Teacher's Mathematics Teaching Belief*

1. Introduction

Teachers' belief systems reflect personal theories about the nature of knowledge and knowing that, in turn, influence teachers' curriculum decision making and teaching approaches (Hofer & Pintrich, 1997; Lovat & Smith, 1995; Pajares, 1992). According to Thompson (1984) teachers' beliefs "seemed to be manifestations of unconsciously held views of expressions of verbal commitments to abstract ideas that may be thought of as part of a general ideology of teaching" (p. 112). They represent implicit assumptions about curriculum, schooling, students, teaching and learning, and knowledge and act as cognitive and affective filters through which new knowledge and experience is interpreted and enacted (Artzt & Armour Thomas, 1996; Lovat & Smith, 1995). Influencing teachers' beliefs, therefore, may be essential to changing teachers' classroom practices.

With the implementation of China's two-child policy, there has been a rapid increase in the number of students enrolled in early childhood education (ECE). As a result of concern over the rapidly growing number of preschoolers, researchers have urged the central government to pay attention to the impact of the implementation of universal ECE on the overall quality of ECE (Liu ,2010; Wang, 2014). Since 2010, most local governments have initiated comprehensive reforms for ECE by establishing political authorities, increasing financial input, and supporting teacher training programmes (Qin, 2013). Kindergarten teachers are a key factor in ensuring the quality of ECE. Faced with the rapidly growing preschool children base, on the one hand, ECE in China must greatly expand the number of kindergarten teachers, and at the

same time pay attention to teachers professional quality, which are two major challenges to the development of ECE. To meet the demand for ECE teachers in China, the government has increased the number of teacher education institutions providing preschool teacher education programmes. Since 2010, teacher education policies have focused on improving teachers' professional development. Through teacher education, teachers have been equipped with professional knowledge, skills and attitude (Fukkink & Lont, 2007), which has contributed to improving the quality of ECE (Kelley, Thornton & Daugherty, 2005; Riley & Roach, 2006). Among them, teachers' beliefs is an important sign and key dimension of teachers' professional development. On the other hand, since 1990s, China has begun a series of reforms on mathematics education. Improving the quality of teachers, especially improving their teaching beliefs, is one of the central tasks of current educational reform (Pang &Ye, 2000).

Given the importance of teacher beliefs, research on it is widely valued. Unfortunately, in the Chinese educational context there is a lack of research on Chinese preschool teachers' beliefs in mathematics. Thus, one of the questions this study was designed to ask is, "what are teachers' beliefs with respect to the nature of mathematics as rules and procedures to achieve one right answer or tools for thought and creative problem solving?" The study also explored other aspect of beliefs associated with traditional or inquiry-oriented beliefs. These are locus of generation of mathematics knowledge and teachers' self confidence in teaching mathematics to preschool children. This study aims to examine mathematics teaching beliefs of selected early childhood teachers in the Nanjing city of China with a view to understanding what mathematics teaching related beliefs do teachers' hold. The findings of this study will contribute to widening the pool of knowledge about Chinese teachers' educational beliefs and in particular their beliefs with respect to students' learning mathematics in preschool.

2. Literature Review

Beliefs are similar to attitudes and knowledge and much scholarly debate have attempted to determine just how beliefs, attitudes, and knowledge differ. Pajares (1992) who echoed Lortie's findings described the difficulty in distinguishing attitudes from beliefs in ways that researchers have defined and studied them. According to Davis and Andrzejewski (2009) teachers' beliefs exist on many levels from global to personal and serve as overarching frameworks for understanding and engaging with the world. They can be thought of as inner guiding principles that teachers' hold to be true, that serve as lenses through which new experiences can be understood. Teachers may hold on to beliefs that may have been formed without evidence and often they are held on to even in the face of contradictory evidence. They become a part of teachers' identities. Beliefs, and their influence, tend to be unexamined by teachers because many are implicit, unarticulated, or unconscious. Failure to examine beliefs can have negative consequences as they guide practice and priorities, determined what is to be ignored, influenced decision making, and shaped what types of interactions are valued (Davis & Andrzejewski, 2009).

The teachers' teaching beliefs refer to what teachers believe about teaching, teacher's role, curriculum, students learning and other relevant factors in teaching situations and instructional procedures. It also includes the opinions, attitudes and psychological tendencies of the teacher towards the relevant factors in the teaching process which they hold and believe to be true (Borg, 2001; Porter & Freeman, 1986). A substantial body of research suggests that teachers' beliefs and values about teaching and learning affect their teaching practices (see reviews by Clark & Peterson, 1986; Fang, 1996; Kagan, 1992; Thompson, 1992). Investigating and if necessary, influencing teachers' beliefs, therefore, may be an essential first step to changing teachers' classroom practices.

In mathematics education, some scholars have divided the dimensions of mathematics teaching beliefs according to the characteristics of mathematics. The current classifications of beliefs in mathematics education are about the nature of mathematics and the teaching and learning of mathematics (Cooney, 2003; Cross, 2009; Ernest, 1989; Speer, 2008; Thompson, 1992).Beswick (2007) identified nine crucial beliefs of teachers that emerged from their classroom observations, interviews with teachers and students survey. He classified these beliefs into three categories: belief about nature of mathematics, belief about mathematics learning and belief about the role of teachers. Similarly, Eynde, Corte, and Verschaffel (2003) summarized the beliefs about mathematics under four different categories: belief about the natures of mathematics and mathematical learning, belief about the self in the context of mathematics learning and problem solving, beliefs about the mathematics teaching and epistemological beliefs. Moreover, Ernest (1989) described the key belief components: nature of mathematics, nature of mathematics teaching, and process of mathematics learning that affect the mathematics teaching leaching activities. It can be seen from the above existing research that scholars have basically the same division of the dimensions of mathematics teaching beliefs. Based on these literatures, the researcher of this study summarized the mathematics teaching beliefs into three dimensions: belief about nature of mathematics, belief about mathematics teaching and learning, belief about the self-role of teachers. The four specific levels of the mathematics teaching beliefs in the questionnaire used in this study correspond to the above three dimensions.

Teacher socialization is a complex process of dynamic development, and teaching belief is influenced as a result of teacher socialization. Therefore, the teaching beliefs of teachers are not invariant, and the interaction of individual, society and individual and society will continue to exert its influence on the teaching beliefs of teachers. According to the existing research, scholars have not reached a consensus on what factors influence the teaching beliefs of

teachers, but most of the researchers discuss them from two aspects: personal factors and environmental factors.

First, from the teachers' personal point of view, the researchers believe that personal factors such as teachers' gender, personality traits, educational background, teaching experience and other personal factors may have a direct impact on their teaching beliefs. For example, Frey (1987) studied the types of teaching beliefs of male and female teachers in secondary schools. As a result of his research he found that the types of beliefs of male and female teachers were different. The male teachers were mostly in an authoritative type and the female teachers were mostly in the democratic type. Lin Qingcai (1990) points out that the teachers' personality traits do affect the teachers teaching beliefs. Zhong Renqin (1994) believes that the teachers' personal characteristics that affect teaching include personal life history, previous concepts, role expectations, and personality. Tang Renyan (1993) found that primary school teachers who graduated from normal university, teachers college or university education departments in China tend to be more progressive in their teaching beliefs than those from regular colleges and teachers colleges or normal schools. Frey (1987), in a study of secondary school teachers, pointed out that the teaching beliefs of male and female secondary school teachers vary with their length of service. Brousseau, Book, and Byers (1988) have pointed out that the teaching experience of teachers is a very important factor in influencing teachers' beliefs. Teachers with different teaching experience have very significant differences in teaching behavior. New teachers tend to respond more slowly than experienced teachers when confronted with the situation in teaching.

Second, from the perspective of the external environment, the working environment, campus culture, evaluation mechanism, parental expectations and requirements all have an important impact on teachers teaching beliefs.

For example, Yi (2004) believes that the external environmental factors that affect teachers teaching beliefs include school environment, leadership, teachers and parents, education administration department, influence of educational theory researchers, social culture, social events, and so on.

In conclusion, researchers have analyzed the influencing factors of teachers teaching beliefs from different perspectives, but individual factors and external environmental factors are the common concerns of researchers. Individual factors mainly include teachers age, gender, personality trait, educational experience and so on. Environmental factors mainly include school atmosphere, social culture, and so on. This study mainly discusses the influence of individual factors on teachers teaching beliefs, and the existing research results have a strong reference value to the exploration of this problem.

This study is aimed at the specific discipline of kindergarten mathematics, from the aspects of mathematics teaching, to investigate the levels of the beliefs of kindergarten teachers in mathematics teaching and if there are significant Differences of teaching belief under the teachers' individual factor variables, which is helpful to help kindergarten teachers understand the importance of their own mathematics teaching beliefs in children's mathematics education and guide the preschool teachers to examine their own deficiencies in mathematics teaching beliefs, promote the expansion and renewal of teachers' mathematics teaching beliefs, and enable them to adjust and improve teaching methods in time to improve the effectiveness of kindergarten mathematics classroom teaching.

Research Questions

The purpose of this study was to investigate teacher's mathematics teaching

belief in Chinese kindergartens. Specifically, this study aimed to answer the following research questions:

RQ1: What are the overall beliefs about teaching and learning mathematics held by kindergarten teachers?

RQ1a: Are there significant differences in mathematics teaching beliefs among teachers with different educational levels?

RQ1b: Are there significant differences in mathematics teaching beliefs among teachers with different years of teaching experience?

RQ1c: Are there significant differences in mathematics teaching beliefs between teachers from different types of kindergartens?

RQ1d: Are there significant differences in mathematics teaching beliefs among teachers with respect to their level of participation in teachers' post-employment training?

3. Methodology

Research Design

This study adopted a mixed-method non-experimental survey design. This study is a descriptive study in that it does not involve any form of experimentation to test causality between independent and dependent variables in the study.

Samples

The sample involved in this study is 300 kindergarten teachers from selected

8 public kindergartens and 6 private kindergartens. All these 300 kindergarten teachers were requested to complete a Questionnaire in this study. The sample contains a sub-sample for interview which is 5 teachers from one public kindergarten and 5 teachers from one private kindergarten. The two kindergartens were randomly selected from the sample of kindergartens. The 10 teachers were divided into Group A and Group B in two focus interview groups. Teachers from Group A were referred to a Respondents GA1(Group A1), GA2, GA3, GA4 and GA5. In same way, teachers from Group B were referred to as Respondents GB1(Group B1), GB2, GB3, GB4 and GB5.

The questionnaire was distributed to these 300 teachers and the researcher obtained a 100% response rate. After data cleaning, a total of 275 responses were found to be suitable for further analysis, effective rate of 91.6%. The description of teachers' information will be presented in Table.1 to Table. 4.

Table 1

Distribution of Respondents by Education Level (n=275)

Profile of Teachers	Value	Frequency	Percent
Education Level	College degree	106	38.5
	Undergraduate degree	169	61.5

Table 2

Distribution of Respondents by Teaching Years (n=275)

Profile of Teachers	Value	Frequency	Percent
Teaching Years	Less than 5(included) years	138	50.2
	6-10 years	42	15.3
	Over 10 years	95	34.5

Table 3

Distribution of Respondents by Kindergarten Type (n=275)

Profile of Teachers	Value	Frequency	Percentage
Kindergarten Type	Public	151	54.9
	Private	124	45.1

Table 4

Distribution of Respondents by Frequency of Post-employment Training (n=275)

Profile of Teachers	Value	Frequency	Percentage
Post-employment Training	Occasionally	30	10.9
	Regularly	245	89.1

Instrument

This study adopted the mixed-methods approach comprised both quantitative and qualitative components. Two research instruments were used in the study to collect data, one is a 70-item survey questionnaire and the other a set of semi-structured interview questions. The survey questionnaire used in this study comprised three sections A, B and C. Section A of the instrument requested respondents to provide demographic information about themselves and their families. The main section of the instrument was section B, a 40-item beliefs survey questionnaire which investigated the overall kindergarten teachers' mathematics teaching beliefs and was obtained from the review of literature (Platas, 2008). Section C of the questionnaire comprised 30-items which explored teaching related behaviors of early childhood teachers and was extracted and combined from two Chinese studies.

Reliability and Validity

Cronbach's alpha coefficients SPSS version 22 was used to check the reliability of the questionnaire in this study. The Cronbach's alpha was found to be 0.91 which is accepted as it is exceeding the ideal radio of the reliability test (Pallant, 2010). On the other hand, Validity and Reliability of interview in this study was established by expert opinion of a panel of experts at SEGi University and pilot study.The instruments were be found to be highly reliable and valid by conducting pilot study and using the viewpoints of a panel of experts.

Data Collection

The data collection of this study is carried out in three steps, the first step is to conduct a pilot study to check the reliability and construct validity of the instruments and test the data collection proceed; The second step is to conduct actual study, first, data collection via questionnaire which is 300 teachers from selected kindergartens were requested to complete the questionnaire; The

third step is data collection via interview which is Semi-Structured interviews with teachers in selected two Kindergartens by Focus Group Interview.

Data Analysis

Quantitative data were collected in this study. The data were analyzed using Statistical Package for the Social Science (SPSS) version 22.0. The data analysis divided into descriptive statistics analysis and inferential statistics analysis.

Descriptive Statistics. This analysis describes in detail the respondents and demographic information of the sample of teaches involved in the study.

Inferential statistics. Appropriate inferential statistical procedures will be used to analyse the quantitative data to answer the research questions posed in the study. First of all, the basic information of teachers, their beliefs were identified by computing means and standard deviation. Secondly, various group differences including (Education Level, Teaching years, Kindergarten type and Post-employment Training) were evaluated by means of t-test and ANOVA.

The qualitative data collected during interview will be transcribed and the text will be analyzed for themes. these themes will be related to the data obtained from the quantitative analysis to further supplement the qualitative data.

4. Results

The first research question in this study examined the overall kindergarten

teachers' mathematics teaching beliefs. As mentioned in Chapter 2 literature review, Taiwan scholars Zhu Yuanyu and Ye Yuzhu (2000) divided teachers' teaching beliefs into two orientations: "traditional" and "progressive". The traditional orientation tends to adopt the viewpoint of restriction, conservativeness, and teacher-centered norms; the progressive orientation tends to adopt the viewpoints of freedom, openness, student center, and development orientation (Zhu & Ye, 2000).

Teachers responded on a five-point Likert scale to each of the items on the questionnaire. In this questionnaire, the highest score for each question was 5 points, the lowest was 1 point, and the middle score was 3. Therefore, the more respondents with scores higher than 3 points, the more their beliefs tended to be progressive. The score of 3 or close to 3 indicates that their beliefs were neutral while below 3 points indicates traditional. Table 5 below show the mean score of overall teachers' beliefs about teaching and learning mathematics, and on each of the sub-scales held by kindergarten teachers.

Table 5: *Distribution of Means and Standard Deviations for Teachers' Overall Mathematics Teaching Beliefs (n=275)*

Sub-scales	No of items	Mean(M)	Std. Dev（SD）
Age-appropriateness	10	3.83	.56
Locus of Generation of Mathematical knowledge	12	3.30	.31
Primary Classroom Goals	8	3.86	.58
Confidence Level in Mathematics instruction	10	3.71	.56
Overall Mathematics Teaching Beliefs	40	3.65	.38

Entries in table 5 show distribution of means and standard deviations for teachers' overall mathematics teaching beliefs. The teacher's overall teaching belief mean score was higher than the mid-point value of 3 (M=3.65, SD=0.38). The results show that the overall mathematics teaching beliefs of teachers was moderately progressive. In addition, it can be seen from the table that the mean scores of all dimensions of teaching beliefs were higher than the mid-point value of 3, which indicates that the beliefs of the teachers in all dimensions were also progressive.

For this question, the author conducted interviews and obtained qualitative findings of teachers' beliefs in each dimension.The findings of the interview are shown in Table 6 below.

Table 6: *Summary of Question 1 Interview findings*

Sub-scales	Responses to the interview
Age-appropriateness of math instruction	All the teachers interviewed agreed that mathematics is suitable for preschoolers and they are able to receive and follow mathematics instruction. "I think that whether it is the need of reality or the interest of the child, preschoolers are suitable and need to receive mathematics instruction." (GB1)
Locus of Generation of Mathematical knowledge	The teachers all agreed that the appropriate way for young children to learn mathematics was games and operations. "The suitable way for children to learn mathematics in preschool should be through autonomous exploration and situational learning."(GA3)
Mathematical Development	The teachers agreed that math is an important part of the

Primary Classroom Goals of preschool Education	preschool curriculum and math activities are good opportunities to develop social skills and emotions in preschool. "...Kindergarten mathematics education should make children feel that mathematics is interesting and useful. This is a goal of emotional attitudes. Another aspect is to cultivate children's ability to explore and solve problems themselves..."(GB5)
Teacher's Confidence Level in Mathematics instruction	Most teachers felt confident in mathematics teaching. " I feel that mathematics activities are very well organized for me."(GB4) "Mathematical teaching makes me feel very fulfilled."(GA5)

According to the responses of the teachers interviewed, the quantitative findings of this question were well supported.

Investigating the differences in mathematics teaching beliefs of kindergarten teachers under different individual factors was one of the important goals of this study. This section presents the results of the differential analysis of the mathematics teaching beliefs of kindergarten teachers. An Independent Sample t-test (see Table 7) was conducted for two types of teachers with college degrees and undergraduate degrees to test whether there were significant differences between the two groups in terms of mathematical teaching beliefs and teaching behaviors at the overall and various dimensions.

Table 7

Distribution of Means, Standard Deviations, t-value and p-value of Mathematics Teaching Beliefs by Teachers' education level

Sub-scales	Education Level	N	Mean(M)	Std. Dev.(SD)	t	p
Age-appropriateness	College degree	106	3.72	0.63	-2.29	.02*
	Undergraduate degree	169	3.89	0.54		
Locus of Generation of Mathematical knowledge	College degree	106	3.29	0.32	-0.77	.44
	Undergraduate degree	169	3.32	0.30		
Primary Classroom Goals	College degree	106	3.75	0.59	-2.48	.01*
	Undergraduate degree	169	3.93	0.57		
Teachers Confidence in Mathematics Instruction	College degree	106	3.68	0.55	-0.78	.44
	Undergraduate degree	169	3.73	0.56		
Overall Mathematics Teaching Beliefs	College degree	106	3.59	0.39		
	Undergraduate degree	169	3.69	0.37	-2.10	.04*
	Undergraduate degree	169	3.68	.45		

*. Statistically significant at *p* < 0.05

The table 7 results of the t-test show that the differences in the overall teaching belief between the sample means are statistically significant, t (272) =-2.10, p<0.05. The mean overall teaching beliefs of undergraduate degree teachers were statistically significantly higher than that of the college degree teachers, indicating that the overall teaching beliefs of the undergraduate teachers were

more progressive than the college degrees teachers. It can also be seen from the results that there is a significant difference in the teaching beliefs between the teachers with college degrees and the teachers with undergraduate degrees, such as the factor of Age-appropriateness, $t(272) = -2.29$, $p < 0.05$; similarly significant differences were also reflected in the factor of Primary classroom goals, $t(272) = -2.48$, $p < 0.05$. There were no significant differences in the mean scores for the other two levels.

An one-way between-groups analysis of variance was conducted to explore the differences in teachers' mathematics teaching beliefs among the teachers with varying years of teaching experience. The results of the analysis are shown in Table 8 below.

Table 8

Analysis of Variance Table for Overall Teachers' Mathematics Teaching Beliefs Based on Teachers' Teaching Years

Sub-scales	Source	Sum of Squares	df	Mean Square	F	Sig.
Age-appropriateness	Between Groups	2.659	2	1.33	4.06	0.02*
	Within Groups	89.172	272	.33		
	Total	91.831	274			
Locus of Generation of Mathematical knowledge	Between Groups	.073	2	.04	.39	0.68
	Within Groups	25.542	272	.09		
	Total	25.614	274			
Primary Classroom Goals	Between Groups	1.163	2	.58	1.74	0.18
	Within Groups	91.197	272	.34		
	Total	92.361	274			
Teachers confidence in Mathematics instruction	Between Groups	1.913	2	.96	3.14	0.045*
	Within Groups	82.964	272	.31		
	Total	84.877	274			
Overall Mathematics Teaching Beliefs	Between Groups	1.073	2	.54	3.80	0.02*
	Within Groups	38.395	272	.14		
	Total	39.468	274			

*. The mean difference is significant at $p<.05$

From the analysis results of one-way ANOVA in above Table 8, it can be seen that there was a significant difference in the overall teaching beliefs of teachers of all teaching ages, F (2,272) =3.80, p<0.05. With respect to teaching beliefs in the sub-scales there were significant differences in teachers' beliefs of Age-appropriateness [F (2,272)=4.06, p<0.05] and Teachers confidence in Mathematics instruction [F(2,272)=3.14, p<0.05]. There were no statistically significant differences among other beliefs sub-scales. Tukey's post-hoc test was used to determine the differences between the categories of teachers of all teaching years in the overall teaching beliefs and the two dimensions. The results of the analysis are shown in Table 9 below.

Table 9

Tukey Post Hoc Test Table for Teachers' Teaching Beliefs Based on Teachers'
Teaching Years

Dependent Variable	(I) Teaching years	(J) Teaching years	Mean Difference (I-J)	Std. Error	Sig.
	Less than 5(included) years	6-10 years	-.02	.10	.81
		Over 10 years	-.21*	.08	.01*
Age-appropriateness	6-10 years	Less than 5(included) years	.02	.10	.81
		Over 10 years	-.19	.11	.08
	Less than 5(included) years	6-10 years	-.03	.10	.79
Teacher's confidence in		Over 10 years	-.18*	.07	.02*
Mathematics instruction	6-10 years	Less than 5 (included)years	.03	.10	.79
		Over 10 year	-.15	.10	.13
	Less than 5(included) years	6-10 years	-.00	.07	.96
Overall		Over 10 years	-.13*	.05	.01*
Mathematics Teaching Beliefs	6-10 years	Less than 5(included) years	.00	.07	.96
		Over 10 years	-.13	.07	.07

*. The mean difference is significant at *p*<.05

The Tukey post-hoc test results shown in Table 9, reveals that there was a statistically significant difference in the mean scores between the teacher with less than 5 years of teaching experience [M=3.60 (0.38)] and teachers with over 10 years of teaching experience [M=3.73(0.37)] in their overall teaching beliefs, $p<0.05$. Teachers with over 10 years of teaching experience are more progressive in their beliefs than teachers with less than 5 years of teaching experience. There were no significant differences in the overall teaching beliefs between the other teaching years groups.

The independent sample t-test was used to detect the differences in teaching beliefs between the two types of kindergarten teachers. The test results are shown in Table 10 below.

Table 10

Distribution of Means, Standard Deviations, t-value and p-value of Mathematics Teaching Beliefs by kindergarten type of teachers

Mathematics Teaching Beliefs	Kindergarten Type	N	Mean	Std. Dev	t	p
Age-appropriateness	Public	151	3.96	.50	4.40	.000***
	Private	124	3.66	.63		
Locus of Generation of Mathematical knowledge	Public	151	3.32	.31	.88	.379
	Private	124	3.29	.30		
Primary Classroom Goals	Public	151	4.01	.52	4.76	.000***
	Private	124	3.69	.60		
Teachers comfort in Mathematics instruction	Public	151	3.79	.54	2.65	.008**
	Private	124	3.61	.56		
Overall Mathematics Teaching Beliefs	Public	151	3.73	.33	4.34	.000***
	Private	124	3.54	.41		

. significant at p<0.01; *. significant at p<0.001

The t-test analysis of the mean scores show in table 10 revealed that there were statistically significant differences in the overall teaching beliefs between the two types of teachers, t(273)=4.34, p<0.001. Public kindergarten teachers' beliefs were significantly more progressive than teachers of private kindergartens in their overall teaching beliefs. In the Age-appropriateness dimension the beliefs of public school kindergarten teachers were statistically significantly different from private school kindergarten teachers, t (273)=4.40,

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p<0.001; Statistically significance differences were also noted between public and private school kindergarten teachers in two other dimensions, the Primary Classroom Goals, t (273)=4.76, p<0.001, and Teacher's confidence in Mathematics Instruction, t (273)=2.65, p<0.01. No statistically significant difference was noted in the Locus of Generation of Mathematical knowledge dimension.

An Independent Sample t-test (see Table 11) was conducted for two types of teachers that chose to train as "occasionally" and "regularly" to test whether there were significant differences in mathematics teaching beliefs between the two groups in terms of overall and all dimensions.

Table 11

Distribution of Means, Standard Deviations, t-value and p-value of Mathematics Teaching Beliefs by Teacher Training Frequency

Sub-scales	Teacher Training Frequency	N	Mean	Std. Dev.(SD)	t	p
Age-appropriateness	Occasionally	30	3.60	.44	-2.23	.027*
	Regularly	245	3.85	.59		
Locus of Generation of Mathematical knowledge	Occasionally	30	3.22	.26	-1.56	.119
	Regularly	245	3.32	.31		
Primary Classroom Goals	Occasionally	30	3.62	.55	-2.45	.015*
	Regularly	245	3.89	.58		
Teachers comfort in Mathematics instruction	Occasionally	30	3.61	.70	-1.02	.310
	Regularly	245	3.72	.54		
Overall Mathematics Teaching Beliefs	Occasionally	30	3.49	.38	-2.35	.019*
	Regularly	245	3.67	.38		

*. The mean difference is significant at p<.05

The Table 11 results of the t-test showed that there was a significant difference in the overall teaching belief between the two categories of teachers, t (272) = -2.35, p<0.05. Teachers who regularly participated in teacher training have significantly higher overall progressive teaching beliefs than teachers who occasionally participated in teacher training. Further the two categories of teachers had significant differences in teaching beliefs on other dimensions, such as Age-appropriateness level, t (272) =-2.22, p=<0.05. and in the Primary

Classroom Goals level, t (272) =-2.45, p=<0.05. There were no significant differences at the other two levels.

5. Discussion and Conclusion

The results obtained from this study found that the overall mathematics teaching beliefs of the kindergarten teachers who participated in this study tended to be progressive. This indicated that with the deepening of the kindergarten mathematics education curriculum reform, teachers are beginning to abandon some traditional mathematics education concepts and are developing modern mathematics teaching beliefs. In addition, the results show that teachers also have higher levels of teaching belief at various sub-scales, which showed the beliefs of teachers were more in-depth about the nature of kindergarten teaching. However, this research finding also showed that the mean score of"Classroom locus of generation of mathematical knowledge (teacher vs child)"was slightly lower than that of other belief sub-scales. This indicated that there was still some level of traditional influence in teachers' beliefs on how to teach children mathematics and how children learn mathematics. Therefore, teachers should further strengthen the research on the cognitive characteristics of children's mathematics learning in the usual education and teaching, so as to better grasp the difficulty of children's mathematics education content, provide appropriate mathematics learning materials, and choose appropriate teaching methods, thereby effectively guarantee the quality of kindergarten mathematics teaching.

In the difference survey of teaching beliefs, the results showed that there were differences in the mathematics teaching of kindergarten teachers under all the individual factor variables involved in this study, that is, the mathematics teaching beliefs of kindergarten teachers with different educational levels, different years of teaching experience, different kindergarten types and different post-employment training frequency have certain differences.

Among them, the differences in mathematics teaching beliefs between teachers of different types of kindergartens were more obvious. This result verified the point mentioned in the literature review: teachers themselves were one of the factors influencing teaching beliefs.

Reference

Artzt, A. F., & Armour-Thomas, E. (1996). Evaluation of Instructional Practice in the Secondary School Mathematics Classroom: A Cognitive Perspective.

Beswick, K. (2007). Teachers' beliefs that matter in secondary mathematics classrooms. *Educational studies in mathematics,* **65**, 95-120.

Borg, M. (2001). Key concepts in ELT. Teachers' beliefs. *ELT journal*, **55(2)**, 186-188.

Brousseau, B. A., Book, C., & Byers, J. L. (1988). Teacher beliefs and the cultures of teaching. *Journal of Teacher Education*, **39(6)**, 33-39.

Clark, C. M., &Peterson, P. L. (1986). Teachers' Thought Processes. In Wittrock, M. C. (Ed). *Handbook of Research on Teaching*, (3rd ed. pp.255-296). Macmilian Publishing company.

Coony, T. (2003). Mathematics teacher education in rural communities:

Developing a foundation for action. Paper presented at the ACCLAIM *Research Symposium*.

Cross, D. I. (2009). Alignment, cohesion, and change: Examining mathematics teachers' belief structures and their influence on instructional practices. *Journal of Mathematics Teacher Education*, **12(5)**, 325-346.

Davis, H., & Andrzejewski, C. (2009). Teacher beliefs. *Psychology of classroom learning: An encyclopedia (PCL)*, **2**, 909-915.

Ernest, P. (1989). The knowledge, beliefs and attitudes of the mathematics teacher: A model. *Journal of education for teaching,* **15(1)**, 13-33.

Fang, Z. (1996). A review of research on teacher beliefs and practices. *Educational research*, **38(1)**, 47-65.

Frey, K. M. (1987). *Administrative implications of self-report instructional beliefs and practices of secondary school teachers.* Unpublished doctoral dissertation, University of Arizona.

Fukkink, R.G, & Lont, A. (2007). Does training matter? A meta-analysis and review of caregiver training studies. *Early Child Research Quarterly*, **22(3**), 294-311.

Hofer, B. K., & Pintrich, P. R. (1997). The development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning. *Review of educational research*, **67(1)**, 88-140.

Kagan, D. M. (1992). Implication of research on teacher belief. *Educational psychologi*st, **27(1)**, 65-90.

Kelley, R. C., Thornton, B., & Daugherty, R. (2005). Relationships between measures of leadership and school climate. *EDUCATION-INDIANAPOLIS THEN CHULA VISTA-*, **126(1)**, 17-26.

Liu, Z. L. (2010). Making preschool education universal should improve the quality simultaneously [in Chinese]. *Studies in Preschool Education*, **10**, 18-22.

Lin, Q. C. (1990). *Research on the belief of Teacher Education in National Primary Schools in China.* Unpublished Doctoral dissertation, National Chengchi University, Tai Wan.

Lovat, R. C., & Smith, M. N. (1995). *Science Teaching Approaches.* Boston, MA: Chestnut Hill.

Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of educational research*, **62(3)**, 307-332.

Pallant, J., & Manual, S. S. (2010). *A step by step guide to data analysis using SPSS*. Berkshire UK: McGraw-Hill Education.

Pang, L. J., & Ye, Z. (2000). On the Relationship between Teacher Education Concept and Educational Behavior. *Educational Research,* **7**, 47

Platas, L. M. (2008). *Measuring teachers' knowledge of early mathematical development and their beliefs about mathematics teaching and learning in the preschool classroom.* Unpublished doctoral dissertation, University of California, Berkeley.

Porter, A. C., & Freeman, D. J. (1986). Professional orientations: An essential domain for teacher testing. *The Journal of Negro Education,* **55(3)**, 284-292.

Qin, X. F., & Wang M. (2013). The shackle and breakthrough of construction in generalized kindergarten [in Chinese]. *Early Education*, **3**, 23-26.

Richardson, V. (1996). The role of attitudes and beliefs in learning to teach. *Handbook of research on teacher education*, **2**, 102-119.

Riley, D. A., & Roach, M. A. (2006). Helping teachers grow: Toward theory and practice of an "emergent curriculum" model of staff development. *Early Childhood Education Journal*, **33(5)**, 363-370.

Speer, N. (2008). Connecting beliefs and practices: A Fine-Grained analysis of a college mathematics teacher's collections of beliefs and their relationship to his instructional practices. *Cognition & Instruction*, **26(2)**, 218-267. doi: 1080/07370000801980944.

Tang, R. Y. (1993). *Research on the Relationship between Teaching Beliefs and Teaching Behaviors of National Primary School Teachers*. Unpublished doctoral dissertation, National Taiwan Normal University.

Thompson, A. G. (1984). The relationship of teachers' conceptions of mathematics and mathematics teaching to instructional practice. *Educational studies in mathematics*, **15(2)**, 105-127.

Thompson, A. G. (1992). Teachers' beliefs and conceptions: A synthesis of the research.

Yi, L. Y. (2004). *Research on Personal Education Concepts of Kindergarten Teachers and Their Formation*. Unpublished doctoral dissertation, Beijing Normal University.

Zhong, R. Q. (1994). *Development of the Professional Belief of the National Primary School Teacher*. Unpublished doctoral dissertation, National Institute of Political Education.

Zhu, Y. Y., & Ye, Y. Z. (2000). *Revision of Introspective Intelligence Scale*. http:/fwww3. nccu.edu.tw/-ycyeh/tools.htm.

The Influence of Teachers' Mathematics Teaching Beliefs on their Teaching Practices in selected Kindergartens in Nanjing City, China

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ABSTRACT

Teaching belief is the viewpoint that teachers hold and believe in the teaching work, teaching role, curriculum, students, learning and other related factors in the teaching situation and teaching process. The scope covers teachers' teaching practice experience and life experience, and guides teachers thinking and behavior. On the one hand, all course decisions and teaching behaviors of teachers in the teaching process are influenced by their teaching beliefs; on the other hand, beliefs affecting teacher behavior are often hidden and unrecognized. Studying on the teaching beliefs can give teachers the opportunity to reflect on their own implicit beliefs, and teaching beliefs may change accordingly, leading to improvements in teaching practice. Therefore, teaching belief is a very important and valuable field of educational research. This study aims to explore the impact of teaching belief on their classroom teaching practices.The data of this study were collected through questionnaire and interviews. The questionnaires were distributed to 300 teachers from the 14 randomly selected kindergartens in the urban Nanjing District. The findings of this study will inform the design of professional development approaches that will increase child-centered and inquiry-based teaching approaches in early childhood classrooms in the Nanjing city of China.

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1. Introduction

Teachers' belief systems reflect personal theories about the nature of knowledge and knowing that, in turn, influence teachers' curriculum decision making and teaching approaches (Hofer & Pintrich, 1997; Lovat & Smith, 1995; Pajares, 1992). According to Thompson (1984) teachers' beliefs "seemed to be manifestations of unconsciously held views of expressions of verbal commitments to abstract ideas that may be thought of as part of a general ideology of teaching" (p. 112). They represent implicit assumptions about curriculum, schooling, students, teaching and learning, and knowledge and act as cognitive and affective filters through which new knowledge and experience is interpreted and enacted (Artzt & Armour Thomas, 1996; Lovat & Smith, 1995). Existing research on teacher beliefs shows that teachers' teaching beliefs can have a profound impact on their performance and learners' achievements. The direct relationship between learner achievements and teachers' teaching beliefs has also been verified through research and interviews in the past two decades (House, 2006; Koller, 2001; Mason & Scrivani, 2004). Influencing teachers' beliefs, therefore, may be essential to changing teachers' classroom practices.

Professional development approaches in any form should increase inquiry-based teaching of mathematics in classrooms. The National Council of Teachers of Mathematics (NCTM, 1991) 'Standards' stress that mathematics needs to be taught as a dynamic tool for thought, not just as a set of operations to be learned. The NCTM Standards stipulate that students need opportunities to communicate math ideas and solve problems with others, that they should engage in mathematical activities with confidence and enthusiasm, and that teachers should use assessment strategies that focus on understanding rather than on right answers. Teachers are encouraged to value and reward students'

effort and persistence, and to give children some discretion in how they approach mathematical problems and encourage them to use a variety of approaches to mathematics tasks. This approach to mathematics instruction, referred to often as 'inquiry-oriented' (or progressive approach in this study), represents fundamental changes in teaching practices, a shift away from the exclusive use of more traditional textbook-based teaching, in which the teacher is in complete control and the students' only goal is to learn operations to get the right answer (Stipek, 2001). Several researchers have suggested that professional development programs designed to help teachers implement inquiry-oriented mathematics instruction are minimally effective, in part because teachers "alter what they learn through their existing beliefs". Cohen and Ball (1990), for example, observed in their study that teachers assimilated new practices to their more traditional beliefs about mathematics education. In their words, 'New wine was poured, but only into old bottles' (p.334; see also Schram & Wilcox, 1988; Skemp, 1978).

A substantial body of research suggests that teachers' beliefs and values about teaching and learning affect their teaching practices (see reviews by Clark & Peterson, 1986; Fang, 1996; Kagan, 1992; Thompson, 1992). Investigating and if necessary, influencing teachers' beliefs, therefore, may be an essential first step to changing teachers' classroom practices. This study aims how the beliefs that teachers hold impact their classroom instructional practices in selected early childhood teachers in the Nanjing city of China. The goal is to better understand the nature of teachers' beliefs about students' learning and teaching in an early childhood environment. Ultimately, it is hoped that the findings of this study will inform the design of professional development approaches that will increase child-centered and inquiry-based teaching approaches in early childhood classrooms in the Nanjing city of China.

2. Literature Review

The research on the relationship between teachers' teaching beliefs and teaching practices is the most common type of research in all the researches on teaching beliefs, which determine whether teachers teaching beliefs are worthy of attention (Wen, 2006).When teachers teaching beliefs can't affect teaching practice, then teachers teaching beliefs do not need to be studied deeply. Since the 1970s, scholars have gradually attached importance to the relationship between teachers' teaching practice and teacher thinking (Clark & Peterson, 1986), in the study of education, research based on teacher beliefs or teacher thinking has emerged, trying to understand its relationship with teachers' teaching practice or decisions (Richards, &Lockhart, 2000). Teaching belief is an important indicator for studying teaching practice. Teachers' teaching beliefs will not only affect teachers' interpretation of teaching theories and experiences, but also affect teachers' teaching plans, and will also determine teachers' teaching practice (Li, 2002).

As a kind of cognition and concept, teaching belief is the intrinsic basis and foundation of teachers' education, but it does not directly affect students, but affects and acts on students through the intermediary of teaching behavior. So, can teaching practice reflect the teacher's teaching beliefs? What is the relationship between the teaching practice exhibited by the teacher and his existing teaching beliefs? The literature demonstrates a tight interconnectedness between ones' beliefs about teaching and learning and one's instructional practices (Czajka, & McConnell, 2019), much research has been done on the relationship between beliefs and teaching practices (Grouws, 2006). At present, there are two main viewpoints of consistency and difference. Fang (1996) described in his review of research on teacher beliefs and practices two competing theses (consistency versus inconsistency). Douglass and colleagues investigated the relationship between graduate teaching assistants' (GTAs') beliefs and practices and reported that GTAs' beliefs were consistent with their practices, exhibiting traits belonging to two primary categories: mostly teacher-centered and transitional (Douglas et al.,

2016). Other studies, however, reported the opposite finding and identified a misalignment between teaching beliefs and instructional practices (Bennett, & Park, 2011; Mansour, 2013; Dolphin, & Tillotson, 2015; Şen and Sarı, 2018).Fang, believes that the relationship between teachers' teaching beliefs and teaching practices has three main situations through the research of teacher beliefs in the past 30 years: (1) teacher beliefs affect teaching practice; (2) Teacher beliefs and teaching practices interact with each other; (3) Teacher beliefs interact with other external environmental factors to influence teaching practice (Fang, 1996).

In summary, the teachers' teaching beliefs are closely related to teaching practices. Teachers' teaching beliefs are the behind-the-scenes guides of teachers' teaching practices, and teachers teaching beliefs influence teachers teaching practices. Mayer (1987) pointed out that the most basic problem in the research of teacher's teaching belief was the relationship between belief and practice. The influence of belief on teacher's practice often varied with the teaching situation and individual teachers. Therefore, when discussing teachers' teaching beliefs, we should also discuss teachers' teaching practices. By understanding teaching beliefs through explicit behavior, we can find out the influence of teachers' teaching beliefs on their practices, so that we can better improve teaching and have practical significance. This study aims to explore the relationship between kindergarten teachers' mathematics teaching beliefs and teaching practices, enable the teachers to adjust and improve teaching methods in time to improve the effectiveness of kindergarten mathematics classroom teaching.

Research Question

The purpose of this study was to investigate the influence of teacher's mathematics teaching belief on their teaching practices in Chinese kindergartens. Specifically, this study aimed to answer the following research

question:

RQ:What is the relationship between the kindergarten teachers' teaching beliefs and teaching practices?

3. Methodology

Research Design

This study adopted a mixed-method non-experimental survey design.This study is a descriptive study in that it does not involve any form of experimentation to test causality between independent and dependent variables in the study.

Samples

The sample involved in this study is 300 kindergarten teachers from selected 8 public kindergartens and 6 private kindergartens. All these 300 kindergarten teachers were requested to complete a Questionnaire in this study.The sample contains a sub-sample for interview which is 5 teachers from one public kindergarten and 5 teachers from one private kindergarten. The two kindergartens were randomly selected from the sample of kindergartens. The 10 teachers were divided into Group A and Group B in two focus interview groups. Teachers from Group A were referred to a Respondents GA1(Group A1), GA2, GA3, GA4 and GA5. In same way, teachers from Group B were referred to as Respondents GB1(Group B1), GB2, GB3, GB4 and GB5.

The questionnaire was distributed to these 300 teachers and the researcher obtained a 100% response rate. After data cleaning, a total of 275 responses were found to be suitable for further analysis, effective rate of 91.6%.

Instrument

This study adopted the mixed-methods approach comprised both quantitative and qualitative components. Two research instruments were used in the study to collect data, one is a 70-item survey questionnaire and the other a set of semi-structured interview questions. The survey questionnaire used in this study comprised three sections A, B and C. Section A of the instrument requested respondents to provide demographic information about themselves and their families. The main section of the instrument was section B, a 40-item beliefs survey questionnaire which investigated the overall kindergarten teachers' mathematics teaching beliefs and was obtained from the review of literature (Platas, 2008). Section C of the questionnaire comprised 30-items which explored teaching related practices of early childhood teachers and was extracted and combined from two Chinese studies.

Reliability and Validity

Cronbach's alpha coefficients SPSS version 22 was used to check the reliability of the questionnaire in this study. The Cronbach's alpha was found to be 0.91 which is accepted as it is exceeding the ideal radio of the reliability test (Pallant, 2010). On the other hand, Validity and Reliability of interview in this study was established by expert opinion of a panel of experts at SEGi University and pilot study.The instruments were be found to be highly reliable and valid by conducting pilot study and using the viewpoints of a panel of experts.

Data Collection

The data collection of this study is carried out in three steps, the first step is to conduct a pilot study to check the reliability and construct validity of the

instruments and test the data collection proceed; The second step is to conduct actual study, first, data collection via questionnaire which is 300 teachers from selected kindergartens were requested to complete the questionnaire; The third step is data collection via interview which is Semi-Structured interviews with teachers in selected two Kindergartens by Focus Group Interview.

Data Analysis

Quantitative data were collected in this study. The data were analyzed using Statistical Package for the Social Science (SPSS) version 22.0. The correlation test was carried out to establish the correlation among independent and dependent variables in the study.

The qualitative data collected during interview will be transcribed and the text will be analyzed for themes. these themes will be related to the data obtained from the quantitative analysis to further supplement the qualitative data.

4. Results

The research question in this study investigated the relationship between kindergarten teachers' teaching beliefs and teaching practices. This was investigated using Pearson product-moment correlation coefficient where the score for r showed the strength of the relationship whilst the p value showed the level of significance. Table 1 below displayed the results of the correlation analysis between the teachers' overall mathematics teaching beliefs and teaching practices.

As shown in the above Table 1, the overall correlation coefficient between teaching belief and teaching practice was r=.511, passing the 5% significance

test, p<0.01, reaching a significant level of 0.01, which show that there is a significant positive correlation between overall mathematics teaching belief with teaching practice and indicated that teachers' overall mathematics teaching beliefs have a positive effect on teaching practices.

Table 1

Pearson Product-moment Correlations between Teachers' Overall Mathematics Teaching Beliefs and Teaching Practice

		AA	LGMK	PG	CL	OTB	TP
Age-appropriateness	Pearson Correlation	1	.295**	.732**	.535**	.873**	.491**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
Locus of Generation of Mathematical Knowledge	Pearson Correlation	.295**	1	.324**	.253**	.546**	.085
	Sig. (2-tailed)	.000		.000	.000	.000	.162
Primary Goal	Pearson Correlation	.732**	.324**	1	.450**	.828**	.394**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
Confidence Level in Providing Mathematics Instruction	Pearson Correlation	.535**	.253**	.450**	1	.769**	.499**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
Overall Teaching Belief	Pearson Correlation	.873**	.546**	.828**	.769**	1	.511**
	Sig. (2-tailed)	.000	.000	.000	.000		.000

Teaching Practice	Pearson Correlation	.491**	.085	.394**	.499**	.511**	1
	Sig. (2-tailed)	.000	.162	.000	.000	.000	

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

The researcher interviewed the teachers about the relevance of teaching beliefs and teaching practices. The interview question was "Do you think mathematics teaching beliefs that teacher have play a big role in the classroom teaching process? What are the main indicators?" The teachers agreed that mathematics teaching belief played a very important role in the process of mathematics teaching. Some specific views of teachers are as follows.

The first teacher of Group A (GA1) proposed:

"I think mathematics teaching belief plays a very important role in the process of mathematics teaching, because belief is directly related to our way of teaching mathematics. If I don't have correct beliefs, for example, in my belief, if mathematics teaching is not based on games, then my words and behaviors in the process of mathematics teaching may be biased towards primary school. rather than the teaching methods acceptable to preschool children..."

The third teacher in Group A (GA3) stated:

"Teaching belief plays a big role in my teaching process. First, if my personal belief ignores the importance of mathematics, then I will weaken mathematics in the proportion of curriculum arrangements; Secondly, if I can't grasp the development characteristics of children of all ages, then the mathematics goals I have set and the mathematics teaching content I choose will be unsuitable for

children..."

The first teacher of Group B (GB1) explained the role of teaching belief in teaching practice in combination with her own changes in mathematics teaching:

". . . At the beginning of my work, when I gave children a math class, I mainly focused on teaching mathematics knowledge directly to my children while children mainly listened to me, because my understanding at that time was that the teacher was the leader in the classroom; After working for a long time, I slowly realized that the child is the subject of mathematics activities. In my current mathematics teaching, I inspired children to think more and let the children find problems and solve problems in operation. I think the change in my behavior comes from the change in my teaching belief. . ."

The second teacher in Group B (GB2) stressed:

"I believe that teaching belief plays a very important role in teaching practice. For example, in my belief, I think mathematics is very important, then I infiltrated mathematics in all aspects of children day life in kindergarten. Such as let the children record how many glasses of water, they drank today..."

The results in Table 1 also showed that the overall mathematics teaching beliefs of the teachers were basically consistent with their teaching practices, indicating that teachers' teaching beliefs can basically be implemented in teaching practice. This conclusion was also reflected in the interview results of the researcher.

The first teacher in Group A (GA1)stated:

"I feel that I practice teaching in accordance with my teaching beliefs in mathematics teaching..."

The first teacher of Group B (GB1) expressed her opinion:

"I dare not say that my teaching behavior is carried out completely according to the teaching belief, but I will try my best to implement my teaching belief in the teaching process...Unless subject to material conditions, such as when placing mathematical materials, some are not available, have to be replaced or abandoned, or can't provide a set of materials for each child and so on. In the above circumstances, my teaching behavior may have some discrepancies with teaching beliefs, as long as the basic concepts related to children's mathematics learning, I think it is relatively easy to implement, for example, pay attention to the application of children's mathematical experience in life..."

The fourth teacher in Group B (GB4) stressed that:

"In the absence of special circumstances, I will definitely follow my teaching beliefs to perform my teaching behavior, but if I encounter some large-scale activities organized by kindergarten, such as the Children's Day performance, because the task is heavy and the time is tight, then I may simplify the process of mathematics activities, shorten the teaching time and so on. In similar special circumstances, the teaching behavior will have some deviation from the teaching belief. . ."

As shown in Table 1 above, the correlation coefficient between the *Age-appropriateness* level and the teaching practice was $r=0.491$, $p<0.01$, indicating a significant positive moderate level correlation between the two variables. Similarly, the correlation coefficients of *Primary Classroom Goals* level, and *teacher's confidence in Mathematics instruction* level and teaching practices were $r=.394$, $r=.499$, $p<0.01$, respectively, showing that these two sub-scales and teaching practice were all significantly positively correlated. It can also be seen from the results that the correlation coefficient between the *Locus of Generation of Mathematical knowledge* level and the teaching practice was $r=.085$, $p=.162$, indicating that the two did not have significant correlation.

From the analysis of the correlation between the various factors of teaching belief and teaching practices, it was found that the teaching beliefs sub-scales at *Age-appropriateness, Primary Classroom Goals* and *Confidence Level in Providing Mathematics instruction* have a significant positive correlation with teaching practice. However, there was no significant correlation between the teaching belief factor of *Locus of Generation of Mathematical knowledge* and the teaching practice. In the interview, individual teachers also mentioned that there were similar phenomena in their teaching practice.

    The second teacher of Group A(GA2) stated:

    "I know that mathematics teaching for preschool children is suitable for teaching with gamification teaching methods. In teaching practice, such teaching beliefs should be incorporated into it, but in actual teaching, sometimes there are some teaching tendencies of primary school. The tendency is that I speak a lot, so that the chances of the child actively thinking and operating autonomously are relatively small.It may be because I am more anxious in the teaching process, eager to let the children master the relevant

mathematical knowledge..."

The fourth teacher of the A group (GA4) mentioned that there is a certain contradiction between the teaching beliefs and the teaching practice. Sometimes, the teaching beliefs are more ideal, but the teaching practice is more realistic. For example, in the case of a relatively low proportion of teachers and children, teachers can fully lead children to explore and discover. But in reality, we have a large number of children in a class, and the time for a math activity is limited. If rely solely on the means of the game to teach, there will be situations where the child's game has not been finished yet, but the time has ended. In this case, I want to ensure that the children can learn some mathematics key knowledge in a limited time, then I can only finish it quickly, and there is a certain contradiction between this and the correct teaching belief.

5. Discussion and Conclusion

Teachers' beliefs regarding teaching and learning are among the most important factors shaping the teacher's classroom practices (Fang, 1996; Kagan, & Smith, K. E., 1988; Pajares, 1992). Much research has been done on the relationship between beliefs and teaching practices (Grouws, 2006). At present, there are two main viewpoints of consistency and difference. Fang (1996) described in his review of research on teacher beliefs and practices two competing theses (consistency versus inconsistency). The findings in this study were consistent with the view of consistency. Many studies have shown that teachers' teaching beliefs affect their teaching behavior and were the most effective indicators for predicting teachers' teaching behavior and teaching effectiveness (Richards, & Lockhart, 2000). In addition, nearly all extant studies that have examined associations between teachers' beliefs about mathematics and mathematics teaching and their classroom practices are

based on qualitative case studies of one or a few teachers (Thompson, 1992). These case studies suggested some congruence between beliefs and practices. Although many studies on teachers' beliefs suggest that there was a relationship, causality is difficult to explain. Some studies strongly suggested teachers' beliefs influenced instructional behaviour, while in other cases it appeared that instructional practiced influences teachers' beliefs (Buzeika, 1996; McGalliard, 1983).

The results obtained from this study found that teachers' overall Mathematics teaching beliefs had a positive effect on teaching practice, which indicated that teachers' teaching beliefs can influence their practices in mathematics teaching and the mathematics teaching beliefs of the teachers were basically consistent with the teaching practices. The teachers who participated in the interview agreed that mathematics teaching belief plays a very important role in the process of mathematics teaching, namely, it recognized the correlation between teaching beliefs and teaching practices, which was consistent with the above analysis results.

Reference

Artzt, A. F., & Armour-Thomas, E. (1996). Evaluation of Instructional Practice in the Secondary School Mathematics Classroom: A Cognitive Perspective.

Bennett, W. D., & Park, S. (2011). Epistemological syncretism in a biology classroom: A case study. *Journal of Science Education and*

Technology, **20(1)**, 74-86.

Buzeika, A. (1996). Teachers' beliefs and practice: The chicken or the egg. In *Technology in mathematics education. Proceedings of the 19th Annual Conference of the Mathematics Education Research Group of Australasia* (pp. 93-100).

Clark, C. M., &Peterson, P. L. (1986). Teachers' Thought Processes. In Wittrock, M. C. (Ed). *Handbook of Research on Teaching,* (3rd ed. pp.255-296). Macmilian Publishing company.

Cohen, D. K., & Ball, D. L. (1990). Relations between policy and practice: A commentary. *Educational Evaluation and Policy Analysis*, **12(3)**, 331-338.

Czajka, C. D., & McConnell, D. (2019). The adoption of student-centered teaching materials as a professional development experience for college faculty. *International Journal of Science Education*, **41(5)**, 693-711.

Dolphin, G. R., & Tillotson, J. W. (2015). " Uncentering" Teacher Beliefs: The Expressed Epistemologies of Secondary Science Teachers and How They Relate to Teacher Practice. *International Journal of Environmental and Science Education*, **10(2)**, 21-38.

Douglas, J., Powell, D. N., & Rouamba, N. H. (2016). Assessing graduate teaching assistants' beliefs and practices. *Journal on Excellence in*

College Teaching, **27(3)**, 35-61.

Fang, Z. (1996). A review of research on teacher beliefs and practices. *Educational research*, **38(1)**, 47-65.

Grouws, D. (Ed.). (2006). *Handbook of research on mathematics teaching and learning:(A project of the national council of teachers of mathematics)* (Vol. 1). IAP.

Hofer, B. K., & Pintrich, P. R. (1997). The development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning. *Review of educational research*, **67(1)**, 88-140.

Kagan, D. M & Smith, K. E. (1988). Beliefs and behaviors of kindergarten teachers. *Educational research*, **30 (1)**, 26-35.

Kagan, D. M. (1992). Implication of research on teacher belief. *Educational psychologist*, **27(1)**, 65-90

Li, L. J. (2002). Research on Pre-service Teachers' Teaching Belief and Its Changes. *Journal of Taiwan Middle School Education, 9.*

Lovat, R. C., & Smith, M. N. (1995). Science Teaching Approaches. *Boston, MA: Chestnut Hil.*

Mansour, N. (2013). Consistencies and inconsistencies between science teachers' beliefs and practices. *International journal of science education*, **35(7)**, 1230-1275.

Mason, L., & Scrivani, L. (2004). Enhancing students' mathematical beliefs: An intervention study. *Learning and instruction*, **14(2)**, 153-176.

Mayer, R. E. (1987). *Educational psychology: A cognitive approach*. Scott Foresman & Co.

McGalliard, W. A. (1985). *Selected factors in the conceptual systems of geometry teachers: Four case studies*. Unpublished doctoral dissertation, University Microfilms.

National Council of Teachers of Mathematics. Commission on Teaching Standards for School Mathematics. (1991). *Professional standards for teaching mathematics*. Natl Council of Teachers of.

Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of educational research*, *62*(3), 307-332.

Pallant, J., & Manual, S. S. (2010). A step by step guide to data analysis using SPSS. *Berkshire UK: McGraw-Hill Education*.

Platas, L. M. (2008). *Measuring teachers' knowledge of early mathematical development and their beliefs about mathematics teaching and learning in the preschool classroom.* Unpublished doctoral dissertation, University of California, Berkeley.

Richards, J. C., & Lockhart, C. (2000). *Reflective Teaching in Second Language Classroom*. Peking: People's Education Press.

Schram, P., & Wilcox, S. K. (1988). Changing preservice teachers' conceptions of mathematics learning. In *PME-NA: Proceedings of the tenth annual meeting* (pp. 349-355).

Şen, Ö. F., & Sari, U. (2018). From traditional to reform-based teaching beliefs and classroom practices of elementary science teachers. *International Journal of Innovation in Science and Mathematics Education (formerly CAL-laborate International)*, *26***(6)**.

Skemp, R. R. (1978). Faux amis. *The Arithmetic Teacher*, *26***(3)**, 9-15.

Stipek, D. J., Givvin, K. B., Salmon, J. M., & MacGyvers, V. L. (2001). Teachers' beliefs and practices related to mathematics instruction. *Teaching and teacher education*, *17***(2)**, 213-226.

Thompson, A. G. (1992). Teachers' beliefs and conceptions: A synthesis of the research.

Wen, R. F. (2006). *Research on a Teacher's Educational Belief.* Unpublished
　　Doctoral Dissertation of Southwest University of China.

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