


Self-efficacy and effectiveness of Chinese university teachers

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Abstract

This descriptive study used teachers in Chinese universities as participants. Using a stratified sampling technique, a sample size of 341 was determined through Raosoft calculator with a margin of error of 5% at 95% confidence level. The study analyzed the relationship between self-efficacy and effectiveness of Chinese university teachers. Specifically, it described the profile of respondents in terms of sex, age, education attainment and length of service; determined teachers' self-efficacy in terms of teaching efficacy, subject matter efficacy, and classroom management efficacy ; assessed teacher effectiveness in terms of student development perspectives, teaching methods and strategies, and teacher-student interactions ; tested the differences in responses when grouped according to profile variables; tested the relationship between self-efficacy and efficiency; and proposed a professional development program for healthy and conducive learning environments for both teachers and students. Based on the findings, most of the respondents were female, aged between 36-40, PhD mostly as their highest educational attainment and with a length of service of 4-6 years. Most of the respondents showed highest subjective efficacy in teacher self-efficacy, with good performance in teacher effectiveness, especially in Teacher-Student Interaction and Teaching methods and strategies. Significant differences in Teacher Effectiveness were found when grouped according to sex while significant differences in subject efficiency were found when grouped according to age. Teachers' self-efficacy is closely related to effectiveness. A professional development program was proposed to create a healthy, supportive learning environment for teachers and students. The Human Resources Department may design a regular Faculty Development Program before the semester or school year starts and one at the middle of the school year or semester in order to create an atmosphere of academic rigor.

Keywords: self-efficacy, effectiveness, university teachers

Self-efficacy and effectiveness of Chinese university teachers

1. Introduction

The exploration of self-efficacy and effectiveness among Chinese university teachers addresses a vital area in educational research, highlighting the need to understand how teachers' beliefs in their abilities influence their teaching outcomes. Recent studies, including those by Akram, et. al., (2019) and Bhansali (2018), have paved the way by defining self-efficacy as teachers' confidence in their teaching capabilities and effectiveness as the tangible impact of their teaching on student learning. However, gaps remain in fully comprehending these dynamics within China's higher education context, where traditional teaching methodologies and the rapid integration of technology present unique challenges and opportunities.

Self-efficacy, as defined by Akram, et. al., (2019), is the belief and confidence that teachers have in their ability to conduct teaching tasks effectively, reflecting their assessment of their teaching competence. This concept is crucial for understanding how teachers perceive their professional roles and manage teaching challenges. Effectiveness, on the other hand, relates to the practical outcomes of teaching, such as student motivation and achievement, indicating the real-world impact of educational processes. The relationship between these two variables is complex. Teachers' self-efficacy can significantly influence their teaching strategies, classroom management, and ultimately, their effectiveness in fostering student learning. Despite some research on this topic, the specific nature of this relationship within Chinese universities remains under-explored, particularly how teachers' years of experience and engagement with innovative educational technologies affect their self-efficacy and effectiveness.

The significance of this study lies in its potential to enhance our understanding of the interplay between self-efficacy and teaching effectiveness among university teachers in China. By adopting a quantitative research approach and utilizing questionnaires to collect data, this research aims to provide a deeper insight into how self-efficacy influences teaching effectiveness. This could offer valuable theoretical and practical implications for improving teaching quality and efficiency, reducing teacher workload, and enhancing job satisfaction. Moreover, by filling the existing research gap, this study will not only contribute to the academic discourse on teacher self-efficacy and effectiveness but will also offer practical insights for educational administrators to design targeted teacher training and support programs. Enhancing teachers' self-efficacy can lead to more positive teaching attitudes, higher motivation, and better coping strategies for teaching challenges, thereby, improving Teacher Effectiveness and educational quality in Chinese universities.

Objectives of the Study - The purpose of this study was to analyze the relationship between self-efficacy and effectiveness of Chinese university teachers. Specifically, it determined teachers' self-efficacy in terms of teaching efficacy, subject matter efficacy, and classroom management efficacy; assessed teacher effectiveness in terms of student development perspectives, teaching methods and strategies, and teacher-student interactions; tested the relationship between self-efficacy and efficiency; and proposed a professional development program for healthy and conducive learning environments for both teachers and students.

2. Method

Research Design - This study adopted a descriptive research design, integrating both qualitative and quantitative analysis methods. In the qualitative analysis phase, participants were interviewed to gain a deep understanding of their views and experiences on self-efficacy and Teacher Effectiveness. For the quantitative analysis, data were collected from a large number of participants through surveys. Subsequently, this data was statistically analyzed using SPSS 17.0 software, aiming to explore the relationship between teachers' self-efficacy and Teacher Effectiveness.

Participants of the Study - The participants of this study were teachers in Chinese universities. The study involved teachers from three universities, a total of 2,000 teachers. The study used a stratified sampling technique in with an initial target sample size of 323 as determined by Raosoft calculator with a margin of error of 5% at 95% confidence level. The sample size and technique used was based on the guidance of the university statistician.

Data Gathering Instrument - The data collection instrument for this study is divided into three parts, the first part is adapted from: Meng Qianyun (2022). An investigation of the relationship between identity and self-efficacy of pre-service English teachers multidimensional questionnaire was divided into three sub-domains Teaching Efficacy, Subject-Matter Efficacy, and Classroom Management Efficacy to determine Teacher Self-Efficacy, with a total of 27 items. The third part is adapted from Bai, Meirong (2019), a survey study of secondary school biology teachers' sense of efficacy in Anping County, Hebei Province [D]. Inner Mongolia Normal University, 2019 The multidimensional questionnaire was divided into three subdomains Concept of Student Development, Teaching methods and strategies, and Teacher-Student Interaction to assess teacher efficacy, with a total of 27 items. The reliability test shows that Cronbach Alpha reliability analysis presents excellent reliability for all indicators including Teaching Efficacy, Subject-Matter Efficacy, Classroom Management Efficacy, Concept of Student Development, Teaching Methods and Strategies, and Teacher-Student Interaction. With these results, it means that the instrument is ready and fit for use in the investigation.

Data Gathering Procedure - After a comprehensive series of research processes, the researcher meticulously designed a questionnaire to assess Chinese college students' career decision-making self-efficacy and career orientation. The questionnaire underwent thorough consultations with advisers and received approval from instructors before being finalized. To ensure its validity and reliability, three experts were invited to review the questionnaire, and a reliability test was conducted. For the distribution of the questionnaire, the researcher coordinated with faculty members involved in the study. These faculty members played a crucial role in distributing the questionnaires to the college students participating in the interviews. Once the distribution phase was underway, the researcher and the assisting faculty members employed various methods to reach out to students, including class announcements, email invitations, and in-person distributions during class or at designated study areas, ensuring a wide and representative sample of respondents. After the questionnaires were distributed, the researcher diligently collected and organized the completed forms. The meticulous collection and tabulation of the data laid a solid foundation for the subsequent detailed analysis and interpretation of the results, moving the study forward towards its objectives of understanding the career decision-making self-efficacy and orientation among Chinese college students.

Data Analysis - To perform data analysis, the following statistical tools were employed. Weighted means and ranking assessed the teachers' self-efficacy and effectiveness. Moreover, the Spearman rho was used to test the significant relationship between teachers' self-efficacy and effectiveness. Additionally, all data were processed using a statistical software known as PASW version 26 to further interpret the results of the study, setting an alpha level of 0.05.

Ethical Considerations - Regarding the study of teachers' self-efficacy and efficiency, the integrity and transparency of academic research were maintained with high ethical standards. In pursuing the research outcomes, the researcher was vigilant to avoid any academic misconduct, including data tampering and plagiarism. To ensure the ethical rigor of the study, appropriate permissions were secured, and privacy regulations were strictly followed, respecting individual differences. This process included a thorough review and approval by the school's ethics review committee, ensuring that the research adhered to the highest ethical standards set forth by the academic community. The researcher made sure the respondents were guaranteed their responses were well- guarded and protected.

3. Results and discussion

Table 1
Summary Table on Teacher Self-Efficacy

Indicators	Weighted Mean	Verbal Interpretation	Rank
Teaching Efficacy	3.18	Agree	3
2. Subject-Matter Efficacy	3.21	Agree	1
3. Classroom Management Efficacy	3.20	Agree	2
Composite Mean	3.20	Agree	

Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Agree; 1.50 – 2.49 = Disagree; 1.00 - 1.49 = Strongly Disagree

Table 1 reveals the overall assessment of teacher self-efficacy, with a composite mean of 3.20 indicating general agreement among respondents. The breakdown shows Subject-Matter Efficacy scoring slightly higher at 3.21, This suggests that respondents were more positive about teachers' sense of efficacy across subject areas. This general agreement may reflect the confidence and competence that teachers demonstrate in their teaching practices. This is followed by Classroom Management Efficacy and Teaching Efficacy. This finding implies that teachers may face a range of challenges in managing student behavior and instructional practices, such as difficulties in classroom management or a diversity of instructional strategies.

This differentiation in scores suggests nuanced perceptions of teachers' self-efficacy across different domains, with subject matter efficacy perceived slightly more favorably. On the other hand, the slightly lower scores for classroom management efficacy and teaching efficacy hint at potential areas for growth in maintaining classroom discipline, engaging students in learning, and enhancing instructional strategies. For educators, this feedback is crucial as it highlights areas of strength and opportunities for improvement. Daniels (2018) advocates for teachers to devise targeted plans to address these opportunities, such as bolstering classroom management techniques and exploring innovative teaching approaches. Educational institutions play a key role in this process, as they are encouraged to recognize and support teachers' professional development needs, offering specific training and resources to aid in their ongoing improvement and self-efficacy enhancement.

Chen, et. al., (2021), a teacher's self-efficacy can have a direct impact on his or her confidence and assessment of competence with respect to the teaching task. When teachers have high self-efficacy, they are more likely to adopt positive teaching behaviors, focus on students' individual differences and needs, and work harder to help students achieve success. On the other hand, Cui (2018) argued that teachers' self-efficacy also affects their attitudes and emotional experiences towards teaching tasks. When teachers have high self-efficacy, they are more likely to maintain positive emotions and attitudes, which in turn contribute more to teaching effectiveness and efficiency.

Table 2
Summary Table on Teacher Effectiveness

Indicators	Weighted Mean	Verbal Interpretation	Rank
Concept of student development	3.16	Agree	3
Teaching methods and strategies	3.17	Agree	2
3. Teacher-Student Interaction	3.23	Agree	1
Composite Mean	3.18	Agree	

Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Agree; 1.50 – 2.49 = Disagree; 1.00 - 1.49 = Strongly Disagree

Table 2 summarizes the respondents' assessment of teacher effectiveness, with a composite mean of 3.18 reflecting a general agreement among participants. The data showed that Teacher-Student Interaction (3.23), ranked first; Teaching methods and strategies (3, 17), ranked second; Concept of student development (3.16), ranked third; This is because it highlights the teacher's ability to establish effective communication and interaction with students. This ability is crucial to the success of the teaching and learning process as it promotes student engagement and motivation to learn. Wang, et. al., (2022) supports this view, highlighting teachers' proficiency in applying suitable teaching methods and strategies tailored to the unique needs and characteristics of their students. Moreover, teachers were acknowledged for their attention to the concept of student development, emphasizing holistic growth, Teachers focus on nurturing all aspects of student development,

including academic, social, emotional, and physical and mental health. This focus on the holistic growth of students reflects teachers' sense of responsibility and commitment to the holistic development of their students, and helps to create a learning environment that fosters the holistic development of students, thereby laying a solid foundation for their future success.

Acknowledging individual differences among students. According to Yang (2018), this recognition enables teachers to better individualize instruction and provide each student with the appropriate support and challenges to maximize their learning and development. By recognizing and respecting students' differences, teachers are able to create an inclusive and supportive learning environment that stimulates students' interest and motivation to learn, leading to a more effective and meaningful education. Despite the overall positive feedback, areas for enhancement were identified. To further elevate teaching effectiveness, it's advised that teachers intensify efforts in nurturing teacher-student relationships and fostering a constructive classroom environment. Wu, et. al., (2019) emphasizes the necessity of refining teaching methods and strategies to cater to the diverse learning requirements of students. Additionally, a greater focus on the comprehensive development of students, implementing the concept of student development more actively, is recommended. Educational institutions are encouraged to support teachers' professional development and teaching effectiveness improvements by offering necessary training and resources. By enhancing teacher education programs and optimizing the distribution of educational resources, these institutions can assist teachers in upgrading their instructional skills and professional knowledge, thereby better supporting student growth and development.

In conclusion, the assessment suggests a positive perspective on teachers' teaching effectiveness, particularly in areas such as teacher-student interactions, teaching methodologies, and the understanding of student development concepts. Nevertheless, continuous efforts are essential to further refine teaching practices and contribute more significantly to the advancement and development of students.

Table 3
Relationship Between Teacher Self-Efficacy and Effectiveness

Teaching Efficacy	rho-value	p-value	Interpretation
Concept of student development	.872**	0.000	Highly Significant
Teaching methods and strategies	.839**	0.000	Highly Significant
Teacher-Student Interaction	0.036	0.524	Not Significant
Subject-Matter Efficacy			
Concept of student development	.989**	0.000	Highly Significant
Teaching methods and strategies	.828**	0.000	Highly Significant
Teacher-Student Interaction	0.005	0.930	Not Significant
Classroom Management Efficacy			
Concept of student development	.880**	0.000	Highly Significant
Teaching methods and strategies	.840**	0.000	Highly Significant
Teacher-Student Interaction	0.001	0.982	Not Significant

Legend: Significant at p -value < 0.01

Table 3 presents the relationship Between Teacher Self-Efficacy and Effectiveness. These findings underscore a significant correlation between teacher self-efficacy and teaching effectiveness. Teacher self-efficacy refers to teachers' beliefs in their capabilities to achieve success in their instructional duties. Teachers with high self-efficacy are more inclined to employ innovative teaching strategies and tackle teaching challenges effectively, thereby positively impacting student learning outcomes. Notably, the link between teacher self-efficacy and teaching effectiveness, particularly in the realm of teacher-student interaction, was found to be non-significant. According to Zhao (2019), this may be attributed to the fact that teacher-student interactions are influenced by a myriad of factors beyond just teacher self-efficacy, including student characteristics and the teaching-learning environment. Hence, to boost teaching effectiveness, there's a necessity to address various factors that influence teacher-student interactions, in addition to fostering teachers' self-efficacy. Educational institutions are urged to focus on developing teachers' self-efficacy, providing the necessary support and resources to augment the quality of teaching.

In summary, the study reveals a positive and significant relationship between teachers' self-efficacy and their

teaching effectiveness. While enhancing teachers' self-efficacy is pivotal for improving teaching effectiveness, a comprehensive approach that also considers other determinants of teacher-student interaction is essential. Educational institutions should implement holistic strategies to improve both teachers' instructional capabilities and the dynamics of teacher-student interactions.

In conclusion, educational institutions should emphasize the development of teachers' self-efficacy and provide the necessary support and resources to improve the quality of teaching. At the same time, there is a need to synthesize multiple aspects of teacher-student interactions to foster a positive teaching atmosphere and to promote effective communication between teachers and students. This demonstrates the importance of increasing teachers' self-efficacy in improving teaching effectiveness, but also the need for an integrated approach to address other determinants of teacher-student interactions. Therefore, educational institutions should implement integrated strategies to both improve teachers' teaching competencies and enhance the dynamics of teacher-student interactions.

Table 4
A Professional Development Program for a Healthy and Conducive Learning Environment for Teachers and Students

Key Result Area	Objectives	Strategies/ Activities	Success Indicators	Person/s Responsible
1. Teacher Self-Efficacy 1.1 Classroom Management Efficacy	To improve classroom order and participation to ensure that the instructional environment is conducive to student learning.	Implement clear classroom rules and a system of rewards and penalties for continuous optimization through regular reviews and student feedback. Create a student engagement assessment mechanism to quantitatively assess student activity and contribution in the classroom. Create a classroom performance tracking system for recording and monitoring each student's classroom behavior and learning outcomes.	90% increased student participation and instruction as planned	Teachers Students
1.2 Teaching Efficacy	To enhance the quality of teaching and learning to ensure that students are able to effectively master core knowledge and skills.	Use diverse teaching methods and tools, including interactive learning, group work and hands-on applications, are used to stimulate students' interest in learning and enhance their understanding. Integrating multimedia elements such as video, audio, animation and images into classroom instruction makes abstract and complex concepts more visual and easier to understand. Comprehensive and interdisciplinary project tasks are designed to enable students to learn and apply knowledge in solving real-world problems, and to develop their innovative thinking and problem-solving skills.	90% improved student achievement and feedback and significant increase in understanding and mastery of the content	Teachers students
2. Teacher Effectiveness 2.1 Teaching methods and strategies	To optimize teaching methods to improve student learning and engagement.	Introduce innovative teaching and learning technologies, such as the use of interactive whiteboards, online learning platforms or virtual reality tools, to enhance students' learning experience.	90% greater interest and engagement in learning, while learning outcomes and feedback reflect the effectiveness of the teaching methods	Teachers students
2.2 Concept of student development	To foster the development of the whole student, focusing on his or her cognitive, emotional, social and physical growth.	Develop a comprehensive student development plan is implemented, including the provision of enriching extra-curricular activities, personalized learning support and regular developmental assessments. A mentoring system is in place where each student is assigned a mentor or tutor to provide academic guidance, career planning, and life counseling. Students are encouraged to participate in international exchange programs, such as student exchange programs, international	90% of the students show positive signs of development in the areas of academic achievement, social skills, self-awareness and physical health	Teachers Management Students

		conferences or overseas volunteering, to broaden their international perspective and enhance their cross-cultural communication skills.		
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4. Conclusions and recommendations

Most of the respondents were Female, aged between 36-40, Highest Educational Attainment was PhD, Length of service was 4-6 years. Most of the respondents showed highest subjective efficacy in teacher self-efficacy. Most of the respondents showed good performance in Teacher Effectiveness, especially in Teacher-Student Interaction and Teaching methods and strategies. Significant differences in Teacher Effectiveness were found when grouped according to gender; significant differences in subject efficiency were found when grouped according to age. Teachers' self-efficacy is closely related to effectiveness. A professional development program was developed to create a healthy, supportive learning environment for teachers and students.

Chinese universities may improve students' understanding of their field of specialization by providing more exposure to the workplace. The Human Resources Department may design a regular Faculty Development Program, before the semester or school year starts and one at the middle of the school year or semester in order to create an atmosphere of academic rigor. Teachers may enhance course syllabi and activities so that they are closely aligned with students' future career prospects. The developed program may be reviewed, implemented and evaluated. To assure that the findings are diverse and broadly representative, future research on self-efficacy and the effectiveness of Chinese universities in preparing students for the workforce may be done and expand sample sizes.

5. References

- Akram, H., Junaid, M., & Yang, Y. (2019). Relationship between self-efficacy and Chinese language speaking anxiety of international students at Northeast normal university. *Journal of Education and Practice*, 10(2), 26-32.
- Bhansali, R. (2018). Self-Propelling Robotic Hydrofoil Arrays: Mechanics, Efficiency, and Optimization [Doctoral dissertation, The University of North Carolina].
- Chen, Y. K., Meng, J. P., Liu, Y. F., & Sun, R. F. (2021). The relationship between personal struggle and subjective well-being of Chinese college students: the mediating role of self-efficacy. *Progress in Psychology*, 11(4), 1042-1049. <https://doi.org/10.12677/AP.2021.114118>
- Cui, H. (2018). A study on the relationship between pupils' personality traits, teachers' teaching style and self-efficacy in English learning [Master's thesis, Yanbian University].
- Daniels, V. L. (2018). A Comparative Study of K12 General Education and Special Education Teachers' Self-Efficacy Levels towards Inclusion of Students with Special Needs [Doctoral dissertation, Northcentral University].
- Wang, J., Liu, D., Li, G., Zhu, J., Yue, S., Li, X., Li, Y., Wu, Y., Wang, B., & Liu, Y. (2022). The impact of self-efficacy on first onset and prognosis of major depressive disorder: findings from a longitudinal study in a sample of Chinese first-year university students. *Psychological Medicine*, 52(1), 178-183. <https://doi.org/10.1017/S0033291721003238>
- Wu, B. L., & Huang, R. (2019). An analysis of ways to improve college students' professional self-efficacy of village officials. *Youth*, (8), 166,171.
- Yang, Y. Q. (2018). The influence of teachers' transformational leadership style on junior high school students' sense of responsibility and the mediating role of self-efficacy [Master's thesis, Hunan Normal University].
- Zhao, L. L. (2019). A study on the correlation between classroom environment and self-efficacy in English learning of non-English majors [Master's thesis, Shandong Normal University].

