

Comparative Study on Teachers' Beliefs, Professional Commitment and Classroom Management Effectiveness—Taking Novice and Experienced Teachers in Public High School as Examples

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Abstract—The purpose of this study is to explore the current status of teachers' beliefs, professional commitment, and classroom management effectiveness of novice and experienced teachers in Chinese high schools, and analyzes the differences between teachers' beliefs, professional commitments, and classroom management effectiveness between novice and experienced teachers in high schools, and the relationship between teachers' beliefs, professional commitments, and classroom management effectiveness. This research takes all novice and experienced teachers who taught in public high schools in Shenzhen, China in 2021 as the research population. A total of 220 novice teachers' and 206 experienced teachers' questionnaires were collected. Statistical methods such as descriptive statistics, independent sample t test, and multiple regression analysis were used for analysis and to draw conclusions.

Keywords—classroom management, professional commitment, teachers' beliefs

I. INTRODUCTION

The classroom is the foundational unit in schools, with the teacher being central to its management. Students are significantly influenced by the classroom environment shaped by their teachers, extending beyond academic learning to include the impact of teachers' beliefs on students' personal and academic development. Research underscores the importance of teachers' classroom management skills, affecting student learning outcomes and long-term growth [1, 2]. Effective classroom management, as noted by Simonsen *et al.* [3], is a cornerstone of successful teaching, highlighting its criticality in teacher training.

The effectiveness of classroom management varies between novice and experienced teachers. Hamre *et al.* [4] found that experienced teachers outperform novices in managing classroom events due to their greater knowledge and skills. This raises questions about the differences in classroom management effectiveness among high school teachers in China, particularly between novice and experienced teachers, an area needing further exploration given the diverse student backgrounds.

Teachers' beliefs, encompassing their self-identity, professional knowledge, and classroom management approaches, significantly influence their classroom management. These beliefs stem from personal experiences, backgrounds, and interactions [5]. Watson and Geest [6] highlighted that teachers' beliefs play a crucial role in curriculum design and classroom activities. Kurt [7] and

Beswick [8] stress the importance of teachers' beliefs in shaping a positive and effective classroom environment. Experienced teachers, recognizing their role more distinctly, can create a more engaging and confident classroom atmosphere. This difference in teachers' beliefs between novice and experienced teachers in China's high schools, and its impact on classroom management, warrants investigation.

Professional commitment is another key aspect, involving teachers' active participation in educational activities and continual professional development to foster a conducive learning environment. Teachers with higher professional commitment show greater dedication, growth, and job satisfaction, which underscores its significance.

This study aims to examine the relationship between teachers' beliefs, professional commitments, and classroom management effectiveness. While previous research has touched upon these aspects, they often lack a comprehensive approach. The current study focuses on comparing these factors between novice and experienced teachers in high school settings. It seeks to explore how teachers' beliefs and professional commitments influence their classroom management effectiveness, considering the potential differences in management strategies and attitudes between novice and experienced teachers.

In conclusion, this study delves into the interconnectedness of teachers' beliefs, professional commitments, and classroom management effectiveness. By focusing on both novice and experienced high school teachers, it aims to provide a more nuanced understanding of these relationships and contribute to ongoing discussions in educational research and practice. This research holds potential implications for teachers, school administrators, educational authorities, and future academic inquiries in the field.

II. LITERATURE REVIEW

A. Differences between Novice Teachers and Experienced Teachers in Teachers' Beliefs

Teachers' beliefs refer to the basis of teachers' self-identification themselves, which are related to teachers' own experience, and then affect teachers' behaviors. Once teachers have established beliefs, especially if they are consistent with their own cognition, beliefs will become firm [9]. Ng *et al.* [10] believe that teachers who know their own beliefs can control students' behavior in class, and they will

think about how to increase the participation of all students in the course and optimize the time allocation of course activities. Therefore, the core of teachers' belief is their own role identification. Teacher belief refers to the psychological identification tendency of teachers to relevant factors such as curriculum teaching work, student learning, and teacher role in the teaching situation and process and includes teacher roles, student differences, teacher-student relationships, classroom management beliefs, curriculum, and teaching.

Teachers of different beliefs will have significant differences in the handling of many class problems. In particular, experienced teachers will try to define the problem of behavior when they encounter student misbehavior, but novice teachers focus on how to solve the problems caused by these misbehaviors as quickly as possible [11]. Clarridge and Berliner [12] also obtained similar results, experienced teachers regard students' misbehavior as typical common behavior, and can provide a variety of practical solutions. On the contrary, it is more difficult for novice teachers to immediately identify the misbehavior of students. Even if they can identify the misbehavior, the novice teacher is caught off guard and cannot deal with the problem in an organized manner. Their research also found that novice teachers tend to attribute their success or failure to problem-solving to the number and type of events, while ignoring their own educational beliefs may also be a contributing factor. It can be seen that compared with novice teachers, experienced teachers are not easily limited by the current situation because of their experience, and are more able to view problems with their own beliefs.

Accordingly, this study establishes hypothesis 1: there are significant differences in teachers' beliefs between novice and experienced teachers in high schools.

B. Differences in Professional Commitment between Novice Teachers and Experienced Teachers

Teachers' professional commitment refers to teachers' commitment to educational work, including their recognition of their educational professional value and respect for educational professional norms, and their willingness to make enthusiastic efforts for their own work [13]. Teachers must have the professional knowledge of the subjects they teach, pass it on systematically to students, and devote themselves to the profession with enthusiasm, continue to study and study with the evolution of education, establish a professional image of teachers, and regard teaching as a lifelong career. In such a virtuous cycle, teachers will have a high degree of professional commitment, thereby improving students' learning effect [14]. This study will explore the concept of teachers' professional commitment from four aspects: 'willingness to stay at the job', 'professional identity', 'work engagement', and 'research training', and use these as the basis for the measurement of variables.

Many studies have pointed out that the professional commitment of experienced teachers is higher than that of novice teachers at many levels, which shows that there are differences in the professional commitment of novice and experienced teachers. The research of Tschannen-Moran and Hoy [15] found that experienced teachers have a higher sense of self-professional self-efficacy than novice teachers, and are more organized in their thinking about running a class.

Therefore, the performance of students is also relatively stable, which shows the importance of teachers' professional commitment.

This study establishes hypothesis 2: there is a significant difference in professional commitment between novice and experienced teachers in high schools.

C. Differences between Novice Teachers and Experienced Teachers in Classroom Management Effectiveness

Classroom management means that teachers can follow certain criteria to effectively and appropriately deal with people and things in the class, so as to promote the learning effect of students [16]. In order to help students learn smoothly, teachers must establish and continue to operate an environment suitable for students' learning, and can effectively deal with events in the class. In this process, the factors of both teachers and students must be considered. Teacher-related factors include teaching quality, work engagement, classroom environment planning, etc. Student-related factors include students' daily performance, student learning effect, the relationship between teachers, students, and parents, etc. [17]. When measuring the effectiveness of classroom management, the factors of both teachers and students must be considered. Based on this concept, Lee [17] proposed six aspects: 'teachers' teaching quality', 'student learning effect', 'classroom environment planning', 'students' daily performance', 'teacher-student relationship', and 'teacher-parent relationship'. This study uses these six aspects as the basis for the measurement of variables.

Studies pointed out that in the classroom management effectiveness, students' learning effectiveness is positively related to students' perception of the school environment. In a warm and positive class climate with a sense of support and belonging, students can focus more on the course content and are more likely to get high grades [18]. If teachers can appropriately demonstrate humorous classroom management strategies to warm up the climate of the class, students will be more engaged in the course, resulting in better academic performance [19].

The environment has a decisive influence on a person. In the classroom environment, it is the key to classroom management that teachers create a classroom environment with good peer relationships, which includes not only creating a physical environment suitable for teaching and learning, but also an environment with good interpersonal interaction. A good classroom environment planning is one of the important connotations of the classroom management effectiveness.

Students' daily performance can be reflected by whether teachers can give clear instructions to students. Collie *et al.* [20] found that teachers who can give clear instructions to students will interact with students more often, so that students can perform better academically according to the instructions of teachers, so that students are more confident to devote themselves to their coursework, forming a good class climate. on the contrary, in classes where teachers fail to give clear and regular guidance, Students often lead to disorder due to unclear teacher's instructions, forming a vicious circle, which eventually leads to out-of-control classroom management and poor climate. This shows the importance of

guiding students' daily performance in teachers' classroom management.

The teacher-student relationship is reciprocal. When teachers show care and respect to students, students can also give teachers the same positive feedback. A positive teacher-student relationship can simultaneously promote the effectiveness of both teaching and student learning. The key is classroom management. Effective teachers will have good interaction with students including communication and discussion, so the relationship between teachers and students is one of the focuses of teachers' classroom management [21]. Teachers who care about students can inspire students to perform at their best, and through teachers' listening, understanding, and attention, students can build trust with teachers, and students can be honest with teachers, which can contribute to the effectiveness of classroom management.

Novice teachers often feel 'reality shock' when faced with new teaching situations [22]. The so-called 'reality shock' refers to the fact that it is difficult for new teachers to apply the theories learned in the previous teacher training process to the actual situation in the classroom. However, experienced teachers have accumulated experience, so they can extract and change strategies at any time to solve unexpected situations in the classroom and make teaching go smoothly. Shulman [23] proposed that teacher knowledge includes "practical wisdom", which refers to the principles and effective methods that teachers acquire in practical work. Experienced teachers organize and analyze these practical experiences and transform them into their own wisdom. The purpose of this study is to explore the current situation and whether there are differences in the effectiveness of classroom management between novice teachers and experienced teachers, hoping to gain an in-depth understanding of the behavior of novice and experienced teachers in classroom management practices.

Accordingly, this study establishes hypothesis 3: there is a significant difference in the classroom management effectiveness of novice and experienced teachers in national high schools.

D. Research on Teachers' Belief, Professional Commitment, and Classroom Management Effectiveness

1) The relationship between teachers' belief and classroom management effectiveness

In addition to guiding teaching behavior, teachers' values or beliefs are more likely to be reflected in the teaching process and classroom management unconsciously. Teachers' beliefs are the basis for teachers' positive self-identification, and are closely related to teacher effectiveness, engagement, and professional commitment [24]. Due to lack of practical experience in teaching and classroom management, novice teachers will not be able to integrate the knowledge system into a clear structure, which means that they have not yet formed a clear educational belief, which may lead to disorganized classroom management. Therefore, it is worth further exploring the relevance of the beliefs of novice and experienced teachers to classroom management.

2) The relationship between teachers' professional commitment and classroom management effectiveness

Professional commitment is the original driving force that

enables teachers to continue to work hard in the teaching profession, thereby enhancing students' learning outcomes and classroom management effectiveness. Research has pointed out that the higher the professional commitment of teachers, the higher their investment in teaching activities will be, and the more responsible they will be for students, and they will perform better in classroom management [25]. Ofoegbu [25]'s study found that teachers with higher achievement motivation, teacher effectiveness, and professional commitment showed more enthusiasm and attentiveness to make students feel more secure. Under the premise that students are convinced of the teacher's sense of security, the classroom climate will be harmonious and active, and the teacher's performance in the classroom management efficiency will be better. This study establishes the fourth hypothesis: teachers' beliefs and professional commitments of novice and experienced teachers in national high schools have significant predictive power on classroom management effectiveness.

III. METHODOLOGY

A. Research Framework

The purpose of this study is to explore the current status of teachers' beliefs, professional commitment, and classroom management effectiveness of novice and experienced teachers in Chinese high schools, and analyzes the differences between teachers' beliefs, professional commitments, and classroom management effectiveness between novice and experienced teachers in high schools, and the relationship between teachers' beliefs, professional commitments, and classroom management effectiveness. The research framework includes personal background variables, teachers' beliefs, professional commitment, and classroom management effectiveness.

The personal background variable is the number of years of teacher's teaching experience. In this research, novice teachers are defined as those who had taught for 1 to 3 years, and experienced teachers were defined as those who had taught for more than 10 years.

Teachers' belief can be measured from five aspects. Firstly, teachers' role – teachers are aware of their roles and responsibilities at work, and are willing to take responsibility for teaching. Secondly, student differences – teachers are able to notice differences between different students and use different ways to encourage and personalize guidance for their differences. Thirdly, teacher-student relationship – teachers can adopt a positive attitude to establish a good relationship with students, encourage, accept, care, and treat each student fairly. Fourthly, classroom management beliefs – teachers' ideas and methods of classroom management. Fifthly, curriculum and teaching – teachers' views on teaching content and methods, curriculum objectives, students' learning strategies, etc.

Professional commitment can be measured from four aspects. Firstly, the willingness to stay at the job – teachers can obtain satisfaction from teaching work and regard teaching work as a lifelong career. Secondly, Professional identity – teachers have a positive evaluation of their teaching work, and agree with their roles, education-related norms,

and professional values. Thirdly, work commitment: teachers show a dedicated and positive attitude towards teaching work, and are willing to spend time and effort to pay attention to and devote themselves to educational work. Fourthly, research and training – teachers are willing to take the initiative to participate in education-related training and training to learn new knowledge about their own professional shortcomings.

The classroom management efficiency can be measured from six aspects. Firstly, teachers' teaching quality – teachers can properly use teaching materials, allocate time for teaching activities, and use a variety of teaching skills in accordance with the teaching content to maintain the fluency of teaching. Secondly, students' academic performance – under the guidance of the tutor, students can actively study various courses and make progress in various learning effects. Thirdly, classroom environment planning – create an environment suitable for teaching and learning, including the display of student works and the use of classroom space. Fourthly, students' daily performance: Tutors can flexibly use the reward and punishment system, establish class norms, and make students behave well. Fifthly, teacher-student relationship – the tutor is willing to listen to and accept the ideas of the students, and give appropriate feedback to the students, making the class atmosphere harmonious. Sixthly, parent-teacher relationship – parents and tutors work together for the future of their students to establish a relationship of mutual trust and harmony.

B. Research Participants

This research takes all novice and experienced teachers who taught in public high schools in Shenzhen, China in 2021 as the research population. Novice teachers are those who have taught for 1 to 3 years, experienced teachers are those who have taught for more than 10 years (including 10 years).

Because the attributes of the research population are relatively specific, considering these specific characteristics can provide in-depth and complete information for the nature of the research question, so a purposive sampling was conducted for the teachers at public high schools in Shenzhen, China.

Considering the possible errors, this research uses the sample estimation formula proposed by Wetzel (2010) to consider the sampling error. With a confidence level of 95% and a tolerable sampling error of $\pm 5\%$, approximately 600 samples are drawn. After deducting incomplete answers and non-response questionnaires, a total of 220 novice teachers' and 206 experienced teachers' questionnaires were collected.

C. Questionnaires

This research uses the 'High School Teachers' Teaching Attitude Scale' as a tool to investigate the teacher's belief, professional commitment, and classroom management effectiveness of novice and experienced teachers. The questionnaire is in the form of a five-point Likert scale, with 5 points from 'completely agree' to 1 point for 'completely disagree'. The higher the score, the more inclined the teacher is to this level.

1) Teacher belief scale

The Teacher belief scale is mainly used to measure the beliefs and psychological tendencies of teachers in the teaching situation. The Teacher Belief Scale has a total of 28 questions, involving five aspects: 'teacher's role', 'student differences', 'teacher-student relationship', 'classroom management beliefs', and 'curriculum and teaching'. The higher the score, the more inclined teachers are to an aspect of teachers' beliefs. The factor loadings of the questions were all above 0.87, and the cumulative explained total variance amounted to 58.61%. The scale's Cronbach's alpha coefficient is 0.94, and each level is between 0.73–0.85, showing good internal consistency reliability.

2) Teacher professional commitment scale

The Teacher professional commitment scale mainly explores teachers' enthusiasm and commitment to students, teaching work, and school-related affairs. The Teacher Professional Commitment Scale has a total of 38 questions, including four aspects: 'willingness to stay at the job', 'professional recognition', 'work engagement', and 'research and training'. The higher the score, the more inclined teachers are to an aspect of professional commitment. The factor loadings of the questions were all above 0.4, and the cumulative explained total variance amounted to 43.73%. The scale's Cronbach's alpha coefficient is 0.94, and each level is between 0.81–0.86, showing good internal consistency reliability.

3) Classroom management Efficiency Scale

The classroom management effectiveness scale mainly explores the degree to which teachers effectively and appropriately deal with the issues in the class from the viewpoints of both teachers and students. The Classroom Management Effectiveness Scale has a total of 34 questions, involving six aspects: 'teaching quality', 'student learning effect', 'classroom environment planning', 'student daily performance', 'teacher-student relationship', and 'parent-teacher relationship'. The higher the score, the more inclined teachers are to an aspect of the 'classroom management effectiveness'. The factor loadings of the questions were all above 0.7, and the cumulative explained total variance amounted to 58.71%. The scale's Cronbach's alpha coefficient is 0.94, and each level is between 0.72–0.84, showing good internal consistency reliability.

D. Data Processing and Analysis

This research first adopts the descriptive analysis method, using the mean and standard deviation, to explore the differences between novice teachers and experienced teachers in various variables and different aspects of each variable. The independent samples t-test was then used to compare the differences between novice and experienced teachers in teacher belief, professional commitment, and classroom management effectiveness to answer research hypotheses 1, 2, and 3. Finally, multiple regression analysis is used to first code dummy variables for high school novice and experienced teachers, and to explore the predictive power of five aspects of teachers' beliefs and four aspects of professional commitment on classroom management effectiveness to answer research hypothesis four.

IV. FINDINGS AND DISCUSSION

A. *The Current Situation Analysis of Teacher Belief, Professional Commitment, and Classroom Management Effectiveness of Novice and Experienced High School Teachers*1) *Current status of teachers' beliefs among novice and experienced teachers*

The results show that the mean overall teacher belief of novice teachers is 4.11, and the mean overall teacher belief of experienced teachers is 4.15, both higher than the median 3. The average scores in all aspects are between 3.89 and 4.22 for novice teachers, and five aspects are ranked based on teachers' scores from high to low as follows: curriculum and teaching, teacher role, student differences, teacher-student relationship, and classroom management beliefs. The average scores of experienced teachers in all aspects ranged from 3.86 to 4.31, and the rankings were teacher role, curriculum and teaching, student differences, teacher-student relationship, and classroom management beliefs. The results show that both novice and experienced teachers in public high schools have a considerable degree of teacher belief, which is higher than the median of 3 at all aspects, which is similar to the findings of Beswick [8], and Rinke [26]. In addition, both novice and experienced teachers scored higher in the aspects of "Curriculum and Teaching" and "Teacher Role", which shows that teachers generally agree with the roles and responsibilities of teachers in their work.

2) *The current status of professional commitment of novice and experienced teachers*

The results show that the average professional commitment of novice teachers is 4.01, and that of experienced teachers is 4.03, both higher than the median 3. The average scores in all aspects are between 3.79 and 4.26 for novice teachers, and aspects are ranked based on teachers' scores from high to low as follows: work engagement, professional recognition, willingness to stay at the job, and research and training.

The results of the study show that the professional commitment of novice and experienced teachers in public high schools is roughly equivalent, which is similar to the findings of Canrinus *et al.* [27], and Zeinabadi [28]. Both novice and experienced teachers have the highest averages in terms of 'work engagement' and 'professional identity', indicating that teachers show a dedicated and positive attitude towards their own teaching work, attach importance to students' learning status and effectiveness, and are willing to make efforts to promote student learning outcomes. At the same time, they also attach importance to their own professional ability, recognize their own teaching work, and can obtain satisfaction and a sense of achievement from it, and then regard teaching as a lifelong career.

3) *The current status of classroom management effectiveness of novice and experienced teachers*

The results show that the average of novice teachers in the classroom management effectiveness is 3.69, and that of the experienced teachers is 3.87, both higher than the median, 3. However, compared with teachers' beliefs and professional commitments, the average difference in classroom management effectiveness between novice teachers and

experienced teachers is slightly larger, but whether it reaches statistical significance still needs to be further tested for differences. The average scores for novice teachers in all areas ranged from 3.41 to 3.99. According to the scores from high to low, the various aspects are ranked as follows: teacher-student relationship, teaching quality, parent-teacher relationship, classroom environment planning, student learning effect, and students' daily performance. The average scores of experienced teachers in all aspects ranged from 3.60 to 4.06, and the ranking of different aspects is teacher-student relationship, teaching quality, classroom environment planning, parent-teacher relationship, students' daily performance, and student learning effect.

The results of the study indicate that the overall classroom management effectiveness of public high school novice and experienced teachers is at an upper-middle level, indicating that both have good classroom management effectiveness. Both novice and experienced teachers showed high effectiveness in 'teacher-student relationship' and 'teaching quality', indicating that teachers believe that these two aspects are very important in classroom management. It can be seen that most teachers are willing to listen to and accept the ideas of students, establish a good communication model with students, and gradually form trust in such interactions with students. A good teacher-student relationship is the key to classroom management.

B. *Differences and Comparisons of Teacher Belief, Professional Commitment, and Classroom Management Effectiveness between Novice and Experienced High School Teachers*1) *The results and discussion of differences in teachers' beliefs between novice and experienced teachers*

Hypothesis 1 of this research is to examine the differences in teachers' beliefs between novice and experienced teachers in national high schools. The results are shown in Table 1. Table 1 shows that the *t* value of the overall teacher belief is -0.74 ($p > 0.05$), which does not reach a significant level, and none of the five sub-aspects has reached a significant difference, so hypothesis 1 does not hold. However, since the averages of both novice and experienced teachers are higher than the median in the overall and all aspects of teachers' beliefs, it can be seen that even if there is no difference between the two, they both have good teachers' beliefs.

Table 1. Summary of the *t*-test analysis of teachers' beliefs among high school novice and experienced teachers

Aspect	Work experience	Number of people	Average	Standard difference	<i>t</i> -value
Teacher role	Novice	220	4.22	0.50	-1.54
	Experienced	206	4.31	0.55	
Student differences	Novice	220	4.12	0.56	-0.78
	Experienced	206	4.17	0.60	
Teacher-student relationship	Novice	220	4.11	0.49	-0.96
	Experienced	206	4.17	0.53	
Classroom management beliefs	Novice	220	3.89	0.56	-0.43
	Experienced	206	3.87	0.59	
Curriculum and Teaching	Novice	220	4.22	0.54	-0.35
	Experienced	206	4.25	0.53	
Overall teachers' beliefs	Novice	220	4.11	0.45	-0.74
	Experienced	206	4.15	0.46	

The results of this study differ from those of Swanson *et al.* [11] and Clarridge and Berliner [12], which shows that experienced teachers have better teachers' beliefs than novice teachers. While the results of this study show that there is no significant difference in teachers' beliefs between novice and experienced teachers. This is due to the efforts of domestic teacher training institutions and teachers themselves in recent years. Both novice teachers and experienced teachers show their commitment to the recognition of the role of teachers, the attention to the differences of students, the emphasis on the relationship between teachers and students, the cultivation of classroom management or the seriousness in curriculum and teaching, etc., to improve students' knowledge in all aspects. It is obvious that with the good faith of teachers, the rights and interests of students will be more protected.

2) Results and discussion of differences in professional commitment between novice and experienced teachers

Hypothesis 2 of this study is to examine the differences in professional commitment between novice and experienced teachers in public high schools. Table 2 shows that the *t* value of the overall professional commitment of teachers is -0.34 ($p > 0.05$), which does not reach a significant level. The three sub-aspects including 'willingness to stay at the job', 'professional recognition', and 'work engagement' also do not reach a significant difference. However, since the average of the overall professional commitment and the three aspects of novice and experienced teachers are higher than the median, it can be seen that even if there is no difference between the two, they both have good professional commitment. However, the *t* value of one of the aspects 'Research and Education' was -2.09 ($p < 0.05$), indicating that there was a significant difference between novice and experienced teachers in this aspect. Experienced teachers ($M = 3.94$) are more active in on-the-job training than novice teachers ($M = 3.79$). Therefore, the hypothesis 2 of this research is partially established.

Table 2. Summary of the *t*-test analysis of professional commitment of high school novice and experienced teachers

Aspect	Work experience	Number of people	Average	Standard difference	<i>t</i> -value
Willingness to stay at the job	Novice	220	3.85	0.58	0.42
	Experienced	206	3.82	0.60	
Professional recognition	Novice	220	4.15	0.40	0.43
	Experienced	206	4.13	0.47	
Work engagement	Novice	220	4.26	0.41	0.57
	Experienced	206	4.23	0.47	
Research and training	Novice	220	3.79	0.61	-2.09^*
	Experienced	206	3.94	0.61	
Overall teacher professional commitment	Novice	220	4.01	0.40	-0.34
	Experienced	206	4.03	0.47	

Note: $*p < 0.05$.

This study is different from the findings of Tschannen-Moran and Hoy [15]. The research of Tschannen-Moran and Hoy [15] found that experienced teachers have higher self-professional self-efficacy than novice teachers. However, this study found no significant differences in these aspects, indicating that both novice and experienced teachers have a certain degree of professional commitment. The only aspect that achieved a significant difference was 'research and training'. Because experienced

teachers may deeply realize the need to acquire new knowledge through study or on-the-job training institutes, they will be more active in 'research and training'. Novice teachers already have a master's degree when they were employed, and most of them are young. What they learn in the process of teacher training usually includes up to data educational knowledge and methods. So, their demand for on-the-job training is not high. These may be the reasons why experienced teachers are more active in research and training than novice teachers.

3) The results and discussion of the differences in classroom management effectiveness between novice and experienced teachers

Hypothesis 3 of this research examines the differences in classroom management effectiveness between novice and experienced teachers in high schools. Table 3 shows that the *t*-value of overall teacher professional commitment is -3.69 ($p < 0.001$), which is at a significant level. Among the six sub-aspects, 'classroom environment planning' ($t = -4.97$, $p < 0.001$), 'class daily performance' ($t = -4.46$, $p < 0.001$), 'teaching quality' ($t = -2.64$, $p < 0.01$) and 'students' learning effect' ($t = -2.60$, $p < 0.01$) all reach significant differences, and the classroom management efficiency of experienced teachers is higher than that of novice teachers. Only the 'teacher-student relationship' and 'parent-teacher relationship' did not reach a significant difference, so the third hypothesis of the study is mostly established.

This research found that from the perspective of overall classroom management efficiency, experienced teachers are indeed better than novice teachers, and there are also significant differences in 'classroom environment planning' and 'class daily performance'. This is similar to the conclusions presented by Collie *et al.* [20] and Hamre *et al.* [4]. 'Classroom environment planning' and 'Class daily performance' are the presentation of the specific culture in the class. Experienced teachers, based on their previous teaching experience, are well aware of the importance of the classroom environment to teaching and learning, and will actively create a learning environment suitable for students.

In addition, there are also significant differences in the 'teaching quality' and 'students' learning effect'. It is obvious that experienced teachers are better at teaching and improving students' learning than novice teachers. The research of Gess-Newsome and Lederman [29] also pointed out that experienced teachers have better flexibility in the teaching process, which means that experienced teachers have a set of models for teaching professional subject knowledge. Due to their rich teaching experience, experienced teachers are more proficient in teaching skills than novices, and can use a variety of teaching skills to help students understand the course content, so students have better learning effects. Besides, experienced teachers are good at creating a good class culture, so that students have high self-esteem and sense of responsibility, high participation in class, and they are more active in completing homework after class. Since students have a high degree of autonomy and self-discipline, teachers are not easily disturbed by emergencies, so they can teach at their own pace, and students can learn gradually and steadily, and the 'students' learning effect' is better.

Table 3. Summary of the t-test analysis of classroom management effectiveness for high school novice and experienced teachers

Aspect	Work experience	Number of people	Average	Standard difference	t-value
Teaching quality	Novice	220	3.89	0.40	-2.64**
	Experienced	206	4.02	0.44	
Students' learning effect	Novice	220	3.44	0.52	-2.60**
	Experienced	206	3.60	0.55	
Classroom environment planning	Novice	220	3.64	0.52	-4.97***
	Experienced	206	3.94	0.54	
Class daily performance	Novice	220	3.41	0.62	-4.46***
	Experienced	206	3.71	0.56	
Teacher-student relationship	Novice	220	4.00	0.50	-1.37
	Experienced	206	4.06	0.46	
Parent-teacher relationship	Novice	220	3.79	0.42	-1.86
	Experienced	206	3.88	0.46	
Overall classroom management effectiveness	Novice	220	3.69	0.40	-3.69***
	Experienced	206	3.87	0.43	

Note: ** $p < 0.01$, *** $p < 0.001$.

C. An Analysis of the Predictive Power of Teachers' Beliefs and Professional Commitments of High School Novice and Experienced Teachers on Classroom Management Effectiveness

This study aims to explore the predictive power of teachers' beliefs and professional commitments of high school novice and experienced teachers on classroom management effectiveness. Before conducting the multiple regression analysis, this study firstly tested the correlation between the five sub-aspects of teacher belief and the four sub-aspects of professional commitment and the Pearson's product difference of classroom management effectiveness ($p < 0.001$), the correlation coefficient is between 0.36–0.63, roughly showing a moderate positive correlation. Then, the 'teaching years' of novice teachers and experienced teachers are virtually coded, and the recoded teacher years, teacher belief, and teacher professional commitment are used to jointly predict the effectiveness of classroom management. The results show that the F value is 2.66 ($p > 0.05$), which does not reach a significant level. Moreover, the t value of 'teaching years' on classroom management efficiency is 0.82 ($p = 0.42 > 0.05$), indicating that teaching years coded with dummy variables cannot effectively predict classroom management efficiency. Therefore, the novice and experienced teachers were separately predicted to explore the predictive power of the novice and experienced teachers' beliefs and teachers' professional commitment on the effectiveness of classroom management. The results of multiple regression analysis are described as follows.

1) The predictive power of novice teachers' teachers' beliefs and professional commitments on classroom management effectiveness

As shown in Table 4, the F value of the overall regression model is 10.68 ($p < 0.001$), which is at a significant level, indicating that the teacher belief and professional commitment of novice teachers can significantly predict the overall classroom management effectiveness. $R^2 = 0.41$, which means that all predictors can jointly and significantly explain up to 41% of the variance in the overall class performance. However, in the analysis of all aspects, only the

$\beta = 0.33$ ($p < 0.01$) of 'professional recognition' reached a significant level, and the standardized coefficient was positive, which means that the professional identity of novice teachers can positively predict the overall classroom management efficiency. The higher the recognition, the higher the classroom management efficiency.

Table 4. Summary table of multiple regression analysis of novice teachers' beliefs and professional commitments on classroom management effectiveness at all levels

Dependent variable	Classroom management effectiveness				
	Unstandardized estimate B	Standardization coefficient β	t	R^2 0.41	F test
Teacher role	0.07	0.08	0.83	10.68***	
Student differences	-0.02	-0.03	-0.21		
Teacher-student relationship	0.13	0.16	1.41	1.30	
Classroom management beliefs	0.09	0.13	1.30		
Curriculum and Teaching	-0.03	-0.04	-0.37	0.14	
Willingness to stay at the job	0.01	0.02	0.14		
Professional recognition	0.34	0.33	2.81**	1.54	
Work engagement	0.14	0.15	1.54		
Research and training	-0.02	-0.04	-0.44		

Note: ** $p < 0.01$, *** $p < 0.001$.

2) The predictive power of experienced teachers' teachers' beliefs and professional commitments on classroom management effectiveness

As shown in Table 5, the F value of the overall regression model is 23.48 ($p < 0.001$), which is at a significant level, indicating that the teacher belief and professional commitment of experienced teachers can significantly predict the overall classroom management effectiveness. $R^2 = 0.60$, which means that all predictors can jointly and significantly explain up to 60% of the variance in overall class performance. It was found that the sub-aspect of teacher belief of experienced teachers – 'teacher-student relationship' ($\beta = 0.27$, $p < 0.01$), and the sub-aspects of professional commitment – 'professional recognition' ($\beta = 0.37$, $p < 0.01$) and 'work engagement' ($\beta = 0.29$, $p < 0.01$) all reached the significant level, and the standardized coefficients were all positive values. Among these three predictor variables, 'professional recognition' has the highest value, followed by 'work engagement', and then 'teacher-student relationship', indicating that the three aspects of teacher-student relationship, professional recognition and work engagement of experienced teachers can positively predict the classroom management effectiveness. The higher the 'teacher-student relationship', 'professional recognition', and 'work engagement' of experienced teachers, the higher the classroom management effectiveness.

3) Chapter summary

This study found that the teachers' beliefs and professional commitment of experienced teachers can explain 60% of the variance in classroom management effectiveness, which is higher than that of novice teachers, 41%. Both show that if

novice and experienced teachers have good teachers' beliefs and professional commitment, their classroom management effectiveness is good, and teachers' beliefs and professional commitment of experienced teachers are more predictive. In addition, only the 'professional recognition' in the teacher's professional commitment has a significant predictive power on the classroom management effectiveness for novice teachers. For experienced teachers, the 'professional recognition' and 'work engagement' in teachers' professional commitment and the 'teacher-student relationship' in teachers' beliefs have significant predictive power on classroom management effectiveness. In fact, the 'professional recognition' of both novice and experienced teachers can significantly predict the effectiveness of classroom management. Both novice and experienced teachers recognize that teaching is a profession, and regard it as an important professional value. They have a positive evaluation of their own teaching work, and such recognition can promote the effectiveness of classroom management.

Table 5. Summary table of multivariate regression analysis of experienced teachers' teachers' beliefs and professional commitments on classroom management effectiveness

Dependent variable Predictor variables	Classroom management effectiveness				
	Unstandardized estimate B	Standardization coefficient β	t	R ² 0.61	F test
Teacher role	-0.12	-0.15	-1.9		23.48***
Student differences	-0.06	-0.08	-0.90		
Teacher-student relationship	0.22	0.27	2.70**		
Classroom management beliefs	0.10	0.12	1.42		
Curriculum and Teaching	0.02	0.03	0.33		
Willingness to stay at the job	0.03	0.04	0.57		
Professional recognition	0.35	0.37	3.12**		
Work engagement	0.27	0.29	3.06**		
Research and training	-0.08	-0.12	-1.25		

Note: ** $p < 0.01$, *** $p < 0.001$.

In fact, teachers' belief in education, professional knowledge they should have, accumulated personal experience, and concern for human nature are closely related to the society, environment, and culture in which they live. In the process of interaction between teachers themselves and the environment, they gradually construct and form their professional perception, which is the professional recognition of teachers [30].

In addition, compared with novice teachers, the 'work engagement' of experienced teachers, which is an aspect of professional commitment, also has a significant predictive power on the effectiveness of classroom management, indicating that experienced teachers are more able to show a dedicated and positive attitude towards teaching work, and are willing to spend more time to deal with teaching-related work and actively engage in teaching work. The reason may be that experienced teachers regard teaching as a mission, identify with teaching work, and combine it with their values, thus forming a higher degree of work engagement. As

mentioned by Tschannen-Moran and Hoy [15], since experienced teachers have a higher sense of self-identity with their professional efficacy than novice teachers, they are more devoted to teaching and have more organized thinking in classroom management, thereby improving the students' academic performance.

Another finding worth discussing is that 'classroom management beliefs' in teachers' beliefs cannot effectively predict 'classroom management effectiveness', which seems to be different from the general cognition. But such things are not uncommon in multiple regression analysis. Because of the covariant relationship between the independent variables, only some sub-aspects can significantly predict the dependent variables. Therefore, such results show that when the sub-aspects of teacher belief and professional commitment are considered together, compared with the 'classroom management belief', the predictions of the 'teacher-student relationship', 'professional recognition', and 'work engagement' are better.

V. CONCLUSION

This study takes novice and experienced teachers of public high schools in Shenzhen as the research participants to explore the differences and relationships between novice and experienced teachers in teacher belief, professional commitment, and classroom management effectiveness. Based on the research results, this study draws conclusions.

Novice teachers have good teachers' beliefs, high professional commitment, and good classroom management efficiency.

Experienced teachers have good teachers' beliefs, high professional commitment, and good classroom management efficiency.

There is no significant difference in teachers' beliefs between novice teachers and experienced teachers.

There are significant differences between novice teachers and experienced teachers in the 'research and training' of teachers' professional commitment.

There are significant differences between novice and experienced teachers in terms of 'teaching quality', 'classroom environment planning', 'student learning effect', and 'class daily performance' in classroom management effectiveness.

Novice teachers' teachers' beliefs and teachers' professional commitment can jointly predict classroom management effectiveness. Novice teachers' teachers' beliefs and teachers' professional commitment can jointly explain about 40% of classroom management effectiveness. However, only the 'professional recognition' aspect of teachers' professional commitment has a significant positive predictive power on classroom management effectiveness.

Experienced teachers' teachers' beliefs and teachers' professional commitment can jointly predict classroom management effectiveness. Teachers' beliefs and teachers' professional commitment of experienced teachers can jointly explain about 60% of the effectiveness of classroom management. Moreover, the 'professional recognition' and 'work engagement' in teachers' professional commitment, and the 'teacher-student relationship' in teachers' beliefs have significant positive predictive power on classroom management effectiveness.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Shi Yu conducted the research and wrote the manuscript under the guidance and supervision of Soon Singh Bikar Singh, who also provided critical revisions and approved the final version of the manuscript.

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