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Analysis of the Current Situation of Cultivating Comprehensive Practical Abilities of Master's Students in Primary Education in Border Areas: A Case Study of M University in Yunnan

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Abstract: This study focuses on 52 master's students majoring in Primary Education at M University in Yunnan, conducting empirical research based on the "Comprehensive Practice Ability Evaluation Index System for Professional Master's Program in Primary Education." The results show that comprehensive practical abilities are hierarchically differentiated as "service ability (3.466) > education ability (3.419) > research ability (3.242)", with teaching and research abilities lagging behind; gender and teacher-training background significantly affect teaching ability, but the convergence of undergraduate majors does not lead to differences in abilities; educational internships do not significantly enhance abilities due to homogeneous scenarios, while participation in school-based curricula (28.85%) significantly promotes the development of all ability dimensions; systematic study of the "Double Reduction" policy significantly improves abilities across all dimensions ($p<0.01$), but the lack of ethnic education characteristic training results in no advantage in multi-ethnic teaching practice. In the future, efforts can focus on building a U-G-S (University-Government-School) collaborative training system, optimizing practical courses and evaluation mechanisms, strengthening policy integration and tiered training, thereby promoting the improvement of practical abilities of master's students in Primary Education.

Keywords: Border areas; Master's students in primary education; Comprehensive practical abilities

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1. Problem statement

Under the strategic background of the high-quality development of education in border ethnic areas and the construction of an educational power, the adaptability of cultivating comprehensive practical abilities of professional master's students in Primary Education (hereinafter referred to as "primary education master's students") has become a key issue. As a typical university in border areas, M University in Yunnan needs to not only fulfill the national requirement of "being competent in teaching and educational research" in its training work but also respond to the special needs of basic education in border areas—long-term shortage of

rural teachers and arduous tasks of multi-ethnic cultural integration teaching. However, existing problems in current training, such as "valuing theory over practice", "inefficient U-G-S collaborative mechanism", "weak professional foundation of students", and "insufficient practical guidance from supervisors" [1,2], result in graduates being unable to quickly adapt to social development and frontline teaching needs.

The "Planning Outline for Building an Educational Power (2024—2035)" and the "New Era Primary and Secondary Education Strong Teacher Plan" clearly state the need to strengthen the cultivation of practical and innovative abilities of professional degree postgraduates, and support education in border areas through the University-Government-School (U-G-S) collaborative mechanism. However, there are structural contradictions between the implementation of current policies and research, posing challenges to the goals: existing research mostly focuses on eastern regions, lacking systematic discussion on the special dilemmas arising from geographical, cultural, and policy implementation differences in border provinces such as Yunnan—research on the U-G-S mechanism is mostly based on plain area experience, which is difficult to adapt to issues such as unequal status and misplaced goals of main subjects in border areas; practical ability evaluation tools focus on general teaching skills [3,4], lacking core indicators for border areas such as ethnic cultural curriculum development; research on micro-collaborative mechanisms is almost blank [5], and no localized training program has been formed, leading to a disconnect between university training and regional needs [6]. Therefore, this study takes M University in Yunnan as an empirical object, focuses on the current situation of cultivating comprehensive practical abilities of primary education master's students, reveals the effectiveness through empirical data, and puts forward suggestions, providing specific reference and micro-empirical basis for similar universities in border areas to optimize training models and build a practical training system in line with the border education ecology.

2. Research methods

2.1. Research objects

The study takes 83 master's students majoring in Primary Education at M University in Yunnan as the research objects. Using the stratified sampling method, subgroups are divided by grade. Based on a 95% confidence level, a sample size of 52 is determined, proportionally allocated to 20 first-year, 16 second-year, and 16 third-year students (all exceeding 50% of each layer). The sample characteristics are as follows: 9 males (17.31%) and 43 females (82.69%); 44 with undergraduate majors in Primary Education (84.62%) and 32 with teacher-training backgrounds (61.54%); 8 with full-time teaching experience (15.38%), 23 with part-time teaching experience (44.23%), and 20 without teaching experience (38.46%); 82.69% have participated in educational internships, mainly in urban primary schools (58.14%), with 51.16% having an internship period of 6 months, and 22 (51.16%) involving multi-ethnic teaching. Among curriculum participation, microteaching has the highest participation rate (90.38%), and school-based curriculum development has the lowest (28.85%). Regarding supervisor guidance, 67.31% of university supervisors have no fixed guidance frequency, and 59.62% of associate supervisors provide regular feedback; 50% have systematically studied the "Double Reduction" policy, and 50% have not.

2.2. Research tools

Based on the "Comprehensive Practice Ability Evaluation Index System for Professional Master's Program in Primary Education" developed by Professor Liu Chao, the study compiled the "Questionnaire on Comprehensive Practice Abilities of Professional Master's Students in Primary Education" and conducted a survey among

master's students majoring in Primary Education at M University in Yunnan [7]. The questionnaire includes basic characteristic information and a comprehensive practical ability evaluation scale. The scale adopts a Likert five-point rating system, covering five dimensions of comprehensive practical abilities of master's students in Primary Education, namely teaching ability, education ability, development ability, service ability, and research ability. The questionnaire was distributed online, and 52 valid questionnaires were collected according to the expected sample size. Subsequently, SPSS 24.0 was used for data collation and analysis. Reliability and validity tests on the scale composed of the five dimensions showed a reliability of 0.942 and a validity of 0.844, meeting the research requirements. Descriptive analysis and difference analysis were then conducted on the sample data.

3. Data analysis

3.1. Descriptive analysis

The survey found that the comprehensive practical abilities of the sampled primary education master's students are ranked in descending order of excellence as follows: service ability (3.466), education ability (3.419), development ability (3.377), teaching ability (3.307), and research ability (3.242). Overall, they are at a medium or above level, indicating that this group can master certain basics through professional learning, but there is significant room for improvement in all aspects of comprehensive practical abilities, especially in "research ability", which requires relevant training and practical exercises to improve research literacy.

3.2. Difference analysis

The study conducted a difference analysis on characteristic variables such as gender and educational background across various dimensions of comprehensive practical abilities. Only core values are presented in the results, with $p < 0.05$* indicating a significant difference, $p < 0.01$** indicating an extremely significant difference, and $p > 0.05$ indicating no significant difference. The results are as follows:

In terms of gender and educational background: gender and undergraduate teacher-training background significantly affect teaching ability—males have a significantly higher mean teaching ability (3.90) than females (3.18, $p = 0.003$**), and students with undergraduate teacher-training backgrounds have better teaching ability (3.47) than non-teacher-training backgrounds (3.05, $p = 0.031$*). Gender also shows a significant difference in development ability ($p = 0.045$*), with males having a higher mean (3.81 > 3.29). Grade and whether the undergraduate major is Primary Education have no significant impact on all ability dimensions ($p > 0.05$); education, service, and research abilities show no significant differences in terms of gender or undergraduate major attribute.

In terms of educational internship: whether participating in internships, type of internship school, internship period, and whether involving multi-ethnic student teaching show no statistically significant differences in all dimensions of comprehensive practical abilities (teaching, education, development, service, research abilities) of primary education master's students ($p > 0.05$).

In terms of participation in practical courses: microteaching has no significant impact on all ability dimensions ($p > 0.05$); school-based curricula significantly improve teaching ($p = 0.002$**), education ($p = 0.017$*), development ($p = 0.016$**), service ($p = 0.026$*), and research abilities ($p = 0.007$**); educational seminars significantly improve teaching ($p = 0.001$**), education ($p = 0.049$*), development ($p = 0.039$*), and service abilities ($p = 0.036$*), but have no significant impact on research ability ($p = 0.078$); educational case analysis significantly improves teaching ($p = 0.021$*), service ($p = 0.048$**), and research abilities ($p = 0.025$*),

but has no significant impact on education ($p = 0.017$) or development abilities ($p = 0.214$).

In terms of supervisor guidance and policy learning: the frequency of university supervisor guidance has no significant impact on all ability dimensions ($p > 0.05$); regular feedback from primary school practical supervisors only significantly improves teaching ($p = 0.005$**) and education abilities ($p = 0.012$*), but has no significant impact on other abilities; systematic study of the "Double Reduction" policy significantly improves teaching ($p = 0.008$**), education ($p = 0.011$*), development ($p = 0.005$**), service ($p = 0.001$**), and research abilities ($p = 0.001$**).

4. Discussions

4.1. Primary education master's students have the best service ability, while teaching and research abilities need improvement

The study shows that the sampled group has the best service ability, while teaching and research abilities are relatively lagging. This phenomenon can be explained by the structural contradictions of the training system: first, the advantage in service ability benefits from the situational adaptability of practical links. Real scenarios, such as home-school cooperation, conform to the experience accumulation mechanism of situational learning theory, and the quantitative assessment orientation of universities (such as activity frequency and parent satisfaction) and reflective training have strengthened the motivation for service investment [8]; second, the weakness in teaching ability exposes the double disconnect between courses and practice. Courses are not designed hierarchically for differences in student sources (teacher-training students lack advanced strategy training, and non-teacher-training students have insufficient subject knowledge reconstruction), and internships remain at the level of "observing classes - imitating", leading to skill solidification; the underlying cause of the lowest research ability reflects the systematic fracture of the scientific research training system—research method courses focus on technical operations (such as SPSS), ignoring the training of practical tools such as educational action research, and the failure of the dual-supervisor system to collaborate has decoupled theoretical guidance from frontline problems [9].

Further, from the perspective of the institutional design of the training program, the goal orientation of the university's primary education master's program emphasizing educational research ability, is in significant contradiction with the measured data. Although the program includes educational research method courses, the content is limited to statistical software operations, lacking the training of practical tools such as the analysis of educational cases in ethnic areas. This course design that values technology over practice, coupled with the tendency of university supervisors to focus on theory over practice (no significant correlation between guidance frequency and ability improvement), ultimately leads to the institutional fracture of research ability training.

4.2. Gender differences and teacher-training background significantly affect teaching ability, while the convergence of undergraduate majors does not cause ability differences

The study found that males have slightly better teaching ability than females, and students with undergraduate teacher-training backgrounds have better teaching ability than those without. Among the samples, 44 students (accounting for 84.62%) have undergraduate majors in Primary Education, but there is no significant difference in comprehensive practical abilities between them and students with non-Primary Education undergraduate majors. On the one hand, differences in gender role expectations may enable males to obtain more innovative practice opportunities during internships, and their communication ability advantages enhance the effectiveness of their teaching implementation [10]. On the other hand, the accumulation of practical capital of teacher-training students

enables them to more efficiently transfer the subject knowledge map and teaching skills from the undergraduate stage, while non-teacher-training students need to invest additional energy to reconstruct the knowledge system [11]. Moreover, the convergence of training programs between undergraduate and master's degrees also greatly affects the ability differentiation of students in the same major. For example, standardized courses (such as the unified "Primary School Textbook Analysis" module) and standardized internship assessments eliminate differences in undergraduate majors.

4.3. There is a non-significant effect between educational internships and comprehensive practical abilities

The study shows that various factors involved in educational internships have no significant impact on comprehensive practical abilities. This phenomenon can be explained by three aspects: first, the fragmentation of the internship support system leads to fragmented practical scenarios. Students are limited to basic tasks such as lesson preparation and teaching, and the cultivation of high-order abilities, such as home-school cooperation and cross-cultural teaching, is absent; second, the diminishing marginal benefits of time investment invalidate differences in internship periods. Short-term internships drive efficient learning due to freshness, while long-term internships (more than 3 months) lead to ability stagnation due to burnout and repetitive tasks; finally, homogeneous training and standardized assessment eliminate differences in school types. Sample data shows that 85% of internships are concentrated in urban primary schools, curriculum design repeats undergraduate microteaching content, and assessment focuses on process compliance, such as the number of lesson plans rather than innovation, making complex scenarios, such as multi-ethnic teaching, difficult to transform into ability growth points [12].

Delving into the causes of this paradox, it is found that the requirement in the university's training program that "off-campus internships ≥ 1 semester and independent completion of teaching research" forms an institutional paradox with the empirical results. On the one hand, internship scenarios are homogeneous, and special scenarios such as multi-grade teaching in border rural primary schools and cross-border student management are insufficiently covered; on the other hand, the evaluation system lacks qualitative evaluation of innovative practices such as differentiated teaching for multi-ethnic students.

4.4. The impact of participation in practical courses on comprehensive practical abilities is polarized

The study found that the participation rate of microteaching reaches 90.38%, but it does not significantly improve all ability dimensions ($p > 0.05$). This conflicts with traditional cognition but is consistent with existing research—microteaching at the postgraduate stage mostly repeats undergraduate training, such as "three basic skills and one painting, and does not design differentiated tasks for higher-order abilities, such as generative teaching strategies. In sharp contrast, although the participation rate of school-based curricula is only 28.85%, the mean values of all ability dimensions of participating students are significantly higher than those of non-participants ($p < 0.05$). Its "University-Primary School-Government" joint development model (such as the design of Yunnan ethnic cultural courses) enables students to deeply participate in the entire chain from needs assessment to implementation evaluation, solving real problems such as multi-grade teaching in border schools through multi-subject collaboration, and activating the deep learning mechanism referred to by situational learning theory.

In fact, the effect differences of different practical courses are also reflected in educational seminars and

case analysis: educational seminars (participation rate 78.85%) significantly improve teaching, education, development, and service abilities ($p < 0.05$), but have no significant change in research ability, reflecting that existing seminars mostly focus on experience summary such as classroom observation logs, lacking embedded training of research methods such as action research design; educational case analysis (participation rate 53.85%) significantly improves teaching, service, and research abilities ($p < 0.05$), but has limited impact on education and development abilities, because it focuses on the analysis of teaching scenarios with problems and countermeasures, which is likely to make students fall into instrumental rational thinking and difficult to trigger endogenous changes such as professional identity [13].

4.5. Feedback from primary school supervisors is partially effective, while the frequency of university supervisor guidance has a weak effect

The study shows that the frequency of university supervisor guidance has no significant correlation with the improvement of comprehensive practical abilities, while regular feedback from primary school practical supervisors can significantly improve teaching ($p = 0.005$) and education abilities ($p = 0.012$). This differentiation of guidance effects essentially reflects the role imbalance and collaborative fracture of the dual-supervisor structure: the academic orientation of university supervisors makes their guidance mostly focus on theoretical aspects such as policy interpretation and literature review, which is difficult to respond to practical pain points in border schools such as multi-grade teaching organization and cognitive differences of ethnic students; the operational suggestions of primary school supervisors based on real classroom problems (such as attention management of cross-border students) and the tacit knowledge passed through demonstrations of ethnic conflict mediation directly enhance the practical effectiveness of teaching strategies [14]. This separation of "academic-practical" guidance essentially stems from institutional flaws in the training program [15]. Although the program stipulates that on-campus supervisors are responsible for theory and off-campus supervisors for practice, there are no specific collaboration norms, such as the frequency of joint lesson preparation and feedback standards.

4.6. Learning the "Double reduction" policy shows an overall improvement effect

The study found that systematic learning of the "Double Reduction" policy has a significant positive impact on all dimensions of comprehensive practical abilities. This finding is of great significance for the future training and development of primary education master's students. On the one hand, through systematic learning of the "Double Reduction" policy, clarifying the practical goal of "improving quality and reducing burden" prompts students to reposition the focus of ability development. For example, the requirement of hierarchical homework design in the policy forces teachers to improve differentiated strategies for teaching ability; the diversified orientation of after-school services strengthens the awareness of resource integration in service ability. On the other hand, the "Double Reduction" policy promotes the transformation of teachers' roles, requiring teachers to take on more responsibilities in various aspects, thereby increasing the requirements for practical abilities. Systematic learning of this policy can improve normal students' cognition of teachers' roles, enable them to understand the requirements of new roles, and then develop relevant abilities in a targeted manner.

5. Conclusion

Through empirical analysis of primary education master's students at M University in Yunnan, the study identifies core issues such as unbalanced ability structure, shortcomings in internship and curriculum

implementation, and ability improvement driven by policy learning. In the future, optimization can be promoted by building a localized "University-Government-School" collaborative system, optimizing practical courses and evaluation indicators, and setting hierarchical modules to make up for ability gaps. The study has limitations such as a single sample and insufficient data tracking. In the future, multi-university research should be expanded, focusing on the training of teachers in border gateway schools, and building a dynamic feedback system to assist the ecological transformation of cultivating primary education master's students in border areas.

Disclosure statement

The authors declare no conflict of interest.

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