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Group Differences and Enhancement Strategies in Career Adaptability: An Empirical Study of 257 Teacher Education Students Majoring in Primary Education

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Abstract: To understand career adaptability among undergraduates majoring in Primary Education in provincial normal universities, this study surveyed 257 such students and analyzed the current state and characteristics of their career adaptability. The results indicate that their overall career adaptability is moderately high. Significant differences in career adaptability were found by program type. Maternal education exerted a notable influence on overall career adaptability and on the "career confidence" dimension, whereas paternal education only showed a highly significant effect on "career confidence." Therefore, schools should consolidate their role as the main arena for education, while families should provide supportive environments, jointly addressing the career adaptation and development needs of Primary Education undergraduates and further enhancing their career adaptability.

Keywords: Career adaptability; Teacher education students; Primary education; Group differences

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1. Introduction

As higher education in China enters the stage of popularization, the number of college graduates from the class of 2025 is expected to reach a new record high [1]. The structural contradiction of simultaneous "employment difficulties" and "labor shortages" has become increasingly prominent. The challenging employment landscape has heightened the importance of career planning in undergraduate education. Teacher education serves as the primary force in cultivating future teachers and plays a crucial role in the development process of Chinese-style modernization [2]. It shoulders the key mission of revitalizing rural education and implementing the national strategy of the "Strong Teacher Plan" [3], while also facing the unique situation of a relatively fixed career path under the integrated training model of "public funding-contract fulfillment-establishment." The level of career adaptability among teacher education students not only relates to their personal career growth but also directly

impacts the stability of the teaching workforce and the quality of education.

Against this backdrop, "career adaptability" is regarded as a variable that analyzes individual flexibility from the perspective of an individual's career. It represents positive psychological resources that individuals possess to cope with existing and future unpredictable career changes, as well as problems, tasks, and transitions in career development [4]. Individuals with high levels of career adaptability can better adapt to changes in the professional environment. Possessing career adaptability can enhance an individual's sense of accomplishment in their work and lead them to achieve success [5]. Thus, they can achieve a greater sense of accomplishment and satisfaction in their career development. Therefore, exploring the current state and fostering the enhancement of career adaptability among primary education majors not only expands upon existing career development theories but also responds to the "Strengthening Teachers Plan." It is, moreover, a practical necessity for improving the quality of teacher training and optimizing teacher education policies.

2. Research methods and tools

2.1. Research subjects

This study selected undergraduate students majoring in primary education at a normal university in Shandong Province as the survey subjects. The sample encompassed three types of training programs: publicly funded normal students, regular undergraduates, and "3+4" articulation transfer students, ensuring both diversity and representativeness. A total of 257 questionnaires were distributed. The specific demographics are as follows: 95 males and 162 females; 110 with urban household registrations and 147 with rural household registrations. By training type, there were 78 "3+4" articulation transfer students, 71 regular undergraduates, and 132 publicly funded normal students. In terms of grade distribution, there were 69 freshmen, 64 sophomores, 54 juniors, and 94 seniors.

2.2. Research tools

This study employed the Chinese version of the Career Adapt-Abilities Scale—China Form, revised by Hou and others. This scale consists of 24 items and encompasses four dimensions: career concern, career control, career curiosity, and career confidence. The scale adopts a Likert five-point scoring method, with higher scores indicating stronger career adaptability in individuals. This scale meets the requirements of psychometrics, demonstrating good reliability and validity, and can be used as a tool to measure career adaptability levels. The Cronbach's α coefficient for the overall scale is 0.89, while the coefficients for the four subscales are 0.790, 0.640, 0.710, and 0.740, respectively, indicating good reliability of the scale [6].

2.3. Statistical methods

To standardize the measurement units, the total score and scores for each dimension of career adaptability were converted into average scores (average score = total score/number of items). Data analysis was conducted using SPSS 26.0.

3. Research results

As can be seen from **Table 1**, the overall average score for career adaptability among undergraduate students majoring in primary education is 3.831, which is higher than the theoretical median of 3 and indicates a

moderately high level. Scores for the four dimensions are as follows: career control (3.877) > career concern (3.857) > career confidence (3.798) > career curiosity (3.794). Among these, "career curiosity" received the lowest score, suggesting that students lack sufficient motivation to explore new career information and diverse pathways.

Table 1. Career adaptability of undergraduate students majoring in Primary Education

Metric	Minimum	Maximum	Mean	Standard deviation
Career adaptability	2.125	4.292	3.831	0.435

3.1. Analysis of the influence of demographic variable factors

Independent sample *t*-tests and ANOVAs were conducted on demographic factors such as gender, place of domicile, and whether one is an only child, along with data on various dimensions of career adaptability. This was done to determine the relationships between the career adaptability of the participating college students and relevant demographic variables. **Table 2** presents the results of the *t*-tests and ANOVAs on the effects of demographic variable factors on different dimensions of career adaptability. As can be seen from **Table 2**, for the gender variable, the *P*-values in the four dimensions of career concern, career control, career curiosity, and career confidence are all greater than 0.05, indicating that the differences do not reach a significant level. This suggests that there are no significant differences between male and female college students across all dimensions of career adaptability; this finding is consistent with the research conclusion of Herrmann [7] regarding gender differences in career adaptability. Urban students scored slightly higher than rural students in all dimensions, but for all dimensions, $P > 0.05$, indicating that the differences are not significant. This suggests that there are no significant differences in the career adaptability of primary education majors based on the variable of the students' place of origin; this result aligns with the research by Zhao *et al.* [8] on urban-rural differences among college students and also shows a trend where urban students score higher than rural students. Only children scored slightly higher than non-only children in all dimensions and in the total score, but for all dimensions, $P > 0.05$, indicating that the differences are not significant. This suggests that there are no significant differences in the career adaptability of primary education majors based on the variable of whether one is an only child, a conclusion consistent with the research results of Zhang *et al.* [9].

Table 2. Results of *t*-tests and ANOVAs on the effects of demographic variable factors on different dimensions of career adaptability

Dimension	Gender (M ± SD)		*P*-value	Household registration (M ± SD)		*P*-value	Only child (M ± SD)		*P*-value
	Male	Female		Rural	Urban		Yes	No	
Career concern	3.82 ± 0.54	3.88 ± 0.52	0.456	3.85 ± 0.54	3.87 ± 0.52	0.733	3.89 ± 0.53	3.83 ± 0.53	0.365
Career control	3.87 ± 0.46	3.88 ± 0.47	0.848	3.85 ± 0.48	3.91 ± 0.45	0.369	3.89 ± 0.47	3.87 ± 0.46	0.794
Career curiosity	3.80 ± 0.52	3.79 ± 0.51	0.915	3.78 ± 0.55	3.81 ± 0.46	0.619	3.79 ± 0.52	3.79 ± 0.50	0.982
Career confidence	3.80 ± 0.51	3.80 ± 0.50	0.977	3.77 ± 0.53	3.83 ± 0.47	0.306	3.82 ± 0.51	3.79 ± 0.50	0.642
Total adaptability	3.82 ± 0.44	3.84 ± 0.43	0.8	3.81 ± 0.46	3.86 ± 0.40	0.432	3.85 ± 0.45	3.82 ± 0.43	0.637

3.2. Analysis of the impact of training type factors

Independent samples *t*-tests and analysis of variance were conducted to examine the relationship between different training types and various dimensions of career adaptability, yielding insights into the correlation between career adaptability variables and training types among the participating college students. As shown in **Table 3**, significant differences in career adaptability exist across different training types. Specifically, students in the "3+4" articulated transfer program and those receiving tuition-free normal education scored significantly higher in career adaptability than regular undergraduate students, with the latter group scoring higher than the former. Training type indeed influences college students' career adaptability: students receiving tuition-free normal education, benefiting from early career orientation, policy guarantees, and internship resources, as well as those in the "3+4" articulated transfer program, who benefit from a 3-year vocational school linkage prior to university, may possess stronger career confidence and planning abilities compared to regular undergraduate students.

Table 3. Difference test of career adaptability by major type

Dimension	3+4 transition	Regular undergraduate	Government-funded undergraduate	*P*-value
Career concern	3.84 ± 0.60	3.68 ± 0.54	3.97 ± 0.45	0.002**
Career control	3.90 ± 0.39	3.72 ± 0.53	3.95 ± 0.45	0.004**
Career curiosity	3.77 ± 0.51	3.63 ± 0.55	3.90 ± 0.46	0.002**
Career confidence	3.77 ± 0.51	3.65 ± 0.53	3.90 ± 0.46	0.004**
Total adaptability	3.82 ± 0.44	3.67 ± 0.47	3.93 ± 0.38	0.000**

Note: ** and * represent significance levels of 1% and 5%, respectively.

3.3. Analysis of the impact of parental education level factors

To understand the impact of parents' educational attainment on students' career adaptability, a comparative analysis of differences was conducted. According to the data analysis in **Table 4**, mothers' educational attainment has a significant effect on both the total score of students' career adaptability and the dimension of "career confidence" ($P < 0.05$). Post-hoc tests reveal that students whose mothers have an educational attainment of "junior high school or below" exhibit significantly lower levels of career adaptability compared to those whose mothers have an educational attainment of "high school/technical secondary school" and "bachelor's degree." This result reveals the "basic supporting effect" and "threshold effect" of mothers' educational attainment [10]. As the primary caregivers in children's early education, mothers with higher educational attainment often imply more scientific educational approaches, richer cognitive stimulation, and more positive role modeling, thereby laying a crucial foundation for their children's career confidence [11]. Avoiding excessively low educational attainment among mothers is an important prerequisite for ensuring their children's confidence in career development [12].

Table 4. Difference test of career adaptability among primary education majors based on parental education level

Variable	Parent	Junior high & below	High school / vocational	Associate degree	Bachelor's degree	Postgraduate & above	*F*-value	*P*-value	Post-hoc comparisons
Career concern	Mother	3.75 ± 0.57	3.89 ± 0.51	3.91 ± 0.56	3.99 ± 0.38	3.81 ± 0.55	1.719	0.146	-
	Father	3.77 ± 0.63	3.88 ± 0.48	3.97 ± 0.39	3.86 ± 0.54	4.02 ± 0.37	1.351	0.251	-
Career control	Mother	3.80 ± 0.44	3.93 ± 0.48	3.94 ± 0.44	3.87 ± 0.49	4.00 ± 0.59	1.250	0.290	-
	Father	3.87 ± 0.47	3.86 ± 0.41	3.90 ± 0.50	3.85 ± 0.67	4.10 ± 0.23	0.537	0.708	-
Career curiosity	Mother	3.69 ± 0.55	3.88 ± 0.50	3.76 ± 0.49	3.85 ± 0.41	3.76 ± 0.46	1.845	0.121	-
	Father	3.74 ± 0.55	3.80 ± 0.46	3.85 ± 0.44	3.74 ± 0.69	4.15 ± 0.29	1.354	0.251	-
Career confidence	Mother	3.64 ± 0.49	3.87 ± 0.50	3.84 ± 0.53	3.95 ± 0.41	3.83 ± 0.69	3.783	0.005	1<2, 1<4
	Father	3.69 ± 0.51	3.84 ± 0.47	3.88 ± 0.45	3.75 ± 0.63	4.31 ± 0.17	3.732	0.006	1,2,3,4<5
Total adaptability	Mother	3.72 ± 0.44	3.89 ± 0.44	3.86 ± 0.44	3.92 ± 0.36	3.85 ± 0.53	2.441	0.047	1<2
	Father	3.77 ± 0.46	3.85 ± 0.39	3.90 ± 0.37	3.80 ± 0.60	4.15 ± 0.13	1.838	0.122	-

*Note: (1) Data are presented as mean ± standard deviation; (2) *$P < 0.05$, **$P < 0.01$; (3) In post-hoc comparisons, 1 = junior high school or below, 2 = high school/technical secondary school, 3 = junior college, 4 = undergraduate, 5 = postgraduate or above; (4) Sample size for mother's education level $n = 257$, sample size for father's education level $n = 257$.

The influence of fathers' educational attainment exhibits a different pattern, with significant differences only observed in the dimension of "career confidence" ($P < 0.01$). Moreover, these differences primarily stem from the fact that students in the "postgraduate and above" educational attainment group demonstrate significantly higher levels of confidence compared to other groups. This reflects the "peak pulling effect" of fathers' educational attainment. Fathers often play roles as "role models" and "sources of expectations" in their children's career development [13]. Fathers with higher educational attainment not only internalize high achievement expectations into their children's self-requirements through transmission but also provide high-quality socioeconomic resources and practical opportunities, thereby elevating their children's career confidence to a higher level.

The pathways through which parents' educational attainment influences their children's development differ: mothers focus more on daily companionship, emotional support, and foundational development, forming a broad and sustained foundational support system; fathers, on the other hand, tend to facilitate critical advancements through demonstrating high achievements and providing resource empowerment. Both parents collectively influence the career adaptability structure of their children, particularly forming a complementary effect in the core dimension of "career confidence" [14,15].

4. Conclusion and implications

The overall characteristics of career adaptability among elementary education majors are currently marked by "high attention but low curiosity." Although students show a high level of concern for their future careers, their "career curiosity" is notably insufficient, which may be related to the type of professional training they receive: publicly funded normal students, due to policy guarantees and career certainty, exhibit higher levels of career attention and control, but their single career path diminishes their motivation for exploration. Students

transitioning through the "3+4" integrated program also outperform regular undergraduates due to the skill continuity brought about by their training model. Career certainty is a key situational variable influencing the career adaptability of normal students, aligning with the pathway of "adaptive resources–adaptive responses–adaptive outcomes" proposed in career construction theory.

From the perspective of family factors, different family backgrounds lead to an uneven distribution of students' career adaptability levels, and the lack of career education in family education is an important reason for students' low career adaptability. The mother's educational background influences children's confidence in career exploration through the cultural capital transmission mechanism; the unique effect of the father's educational background on "career confidence" may reflect the prominent role of fathers as occupational role models under traditional gender role divisions. This finding supports the "contextual support–self-efficacy–outcome expectation" chain in social cognitive career theory. In career adaptability education, it is necessary to consider students' family backgrounds and promote the balanced improvement of career adaptability among college students from different family backgrounds.

From the perspective of school education, colleges and universities should strive to achieve precise identification as much as possible, establish a dynamic evaluation database for the career adaptability of teacher education students, and focus on monitoring ordinary undergraduate students and those with low parental educational backgrounds. In addition, curriculum interventions are also crucial. Due to the lack of career education content in secondary education and the overly simplistic career education system in universities, students tend to experience a prolonged period of confusion during their university years and lack clear career plans. It is advisable to incorporate modules to stimulate "career curiosity" during the freshman and sophomore years, such as career figure interviews and interdisciplinary micro-projects; while adding workshops to enhance "career confidence" during the junior and senior years, strengthening self-efficacy through simulated recruitment and micro-lecture competitions.

From the perspective of individual students, in addition to theoretical study during their school years, as future primary school teachers, they should broaden their educational horizons and pay attention to policy arrangements related to education to keep pace with the times. Internships serve as a crucial means of empowering practice for normal university students. Students should seize opportunities for observation and internships to explore how to apply theoretical knowledge learned to teaching in practice and find a suitable professional role in real teaching scenarios.

Undergraduates majoring in primary school education generally demonstrate good career adaptability, with ample opportunities and potential for improvement. The development of their career adaptability is closely linked to factors such as self-efficacy, family background, and school education, with different influencing factors having varying impacts on different dimensions of career adaptability. To effectively enhance the career adaptability of freshmen in applied undergraduate colleges, universities need to establish an evidence-based precision career education system to bridge gaps and improve the quality of vocational preparation for normal university students.

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References

[1] Ministry of Education, 2024, Notice from the Ministry of Education on Ensuring Employment and Entrepreneurship for Graduates of General Higher Education Institutions Nationwide in 2025, viewed August 13, 2025, http://www.moe.gov.cn/srcsite/A15/s3265/202411/t20241112_1162526.html

[2] Zhong B, Yu J, 2024, What It Is and What It Should Be: The Essence and Trend of the "New Normal of Teacher Education." Modern Distance Education Research, (5): 25–33.

[3] General Office of the State Council, 2024, Notice from the General Office of the State Council on Forwarding the Implementation Measures for Public-funded Education for Undergraduate-Graduate Continuum Teacher Education Students at Teacher Education Universities Directly under the Ministry of Education by the Ministry of Education and Other Departments, viewed August 13, 2025, https://www.gov.cn/zhengce/content/202406/content_6957260.htm

[4] Savickas ML, 1997, 2018, Career Adaptability: An Integrative Construct for Life-Span, Life-Space Theory. Career Development Quarterly, 45(3): 247–259.

[5] Yan W, Yu G, Lin L, The Impact of Career Adaptability on Subjective Career Success: The Mediating Role of Job Crafting and the Moderating Role of Perceived Organizational Support. Economic Management Journal, (8): 105–119.

[6] Hou ZJ, Leung SA, Li X, et al., 2012, Career Adapt-Abilities Scale—China Form: Construction and Initial Validation. Journal of Vocational Behavior, 80(3): 686–691.

[7] Hirschi A, Herrmann A, 2013, Calling and Career Preparation: Investigating Developmental Patterns and Temporal Precedence. Journal of Vocational Behavior, 83(1): 51–60.

[8] Zhao X, Xue G, 2010, The Current Situation of College Students' Career Adaptability and Its Relationship with Career Decision-Making Styles. Modern Education Management, (10): 119–122.

[9] Zhang Y, Zhu M, Tao T, et al., 2025, The Impact of Social Support on Career Adaptability among Traditional Chinese Medicine Postgraduates: The Mediating Roles of Core Self-Evaluation and Sense of Professional Mission. Chinese Journal of Social Medicine, (1): 65–69.

[10] Meng S, Li Y, Mai Q, et al., 2023, Investigation and Suggestions on the Career Adaptability of Adolescents in Tianjin. Journal of Tianjin Open University, 27(1): 61–70.

[11] Li Z, Zhao J, Fu Y, 2023, Maternal Academic Involvement and Children's Psychological Adaptation: The Mediating Role of Achievement Goals. Journal of Linyi University, 45(6): 156–165.

[12] Liu J, Cheng M, Wu C, 2023, Parental Education Level, Intergenerational Transmission, and Inequality in Offspring's Basic Education. Economic Perspectives, (7): 91–109.

[13] Chen W, Wu B, 2024, Research on the Impact of Parental Education Level and Educational Involvement on College Students' Academic Performance. Higher Education of Science, (2): 62–74.

[14] Wu C, 2024, The Impact of Parental Autonomy Support on College Students' Career Adaptability: The Roles of Proactive Personality and Personal Growth Initiative. Journal of Changzhi University, 41(2): 123–127.

[15] Chen K, Wu R, 2025, An Empirical Analysis of the Differences in College Students' Career Adaptability. Journal of Chifeng University (Natural Science Edition), 41(2): 71–76.