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Factors Affecting Innovation Education in China A Conceptual Framework Development

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Abstract

This study investigates the factors influencing educational innovation within Chinese primary schools. Utilizing a quantitative research design, data were collected via online questionnaires from 133 representatives of teachers and parents in Nanning, Guangxi Province. Four independent variables—Policy Environment, Teacher Role, Student Performance, and Family Factors—were tested against the dependent variable, Innovation in Primary Education. Descriptive statistics, correlation analysis, and multiple regression were employed for data analysis. The results indicate that the Policy Environment, Student Performance, and Family Factors have a significant positive impact on educational innovation, accounting for 59.8% of the variance. Notably, the Teacher Role was found to have no significant impact in this specific context. Family Factors emerged as the strongest predictor of innovation. The findings provide theoretical and practical insights for policymakers and educators to foster a more creative primary education system in China.

Keywords: Educational Innovation, Policy Environment, Teacher Role, Student Performance, Family Factors, China Primary Education

1. Introduction

1.1 Background and Problem Statement

Innovation is the primary driver of progress in modern society, particularly in education, where it cultivates creativity and problem-solving skills necessary for the 21st century (Su, 2022). In China, primary education serves as the bedrock of the school system, laying the solid foundation for students' future development. However, traditional models often emphasize rote memorization and exam-oriented teaching (Gaokao pressure), leading to a perceived "lack of innovation" (Wang, 2016). Students frequently become passive recipients of knowledge rather than creative thinkers.

Currently, Chinese primary education faces a duality: while some schools strive for quality education and individual personality development, many remain constrained by institutional pressures to maintain high test scores and enrollment rates. Addressing this gap requires a deep exploration of the systemic factors policy, teachers, students, and family that can shift the paradigm toward a more innovative environment.

1.2 Research Significance

The study holds both theoretical and practical significance. Theoretically, it helps educational scholars and policymakers gain a deeper understanding of the nature of innovation within the unique socio-cultural context of China. It contributes to the advancement of pedagogical disciplines by discovering new educational laws and refining teaching models. Practically, the research provides direct guidance for educators to improve teaching quality and for administrators to formulate more scientific education policies. By identifying that innovation is not solely a school-based outcome but deeply embedded in the family unit, this study offers a holistic view of educational reform.

1.3 Research Objectives and Hypotheses

The primary objective of this study is to analyze the factors influencing the innovation of primary education in China. The study proposes four hypotheses:

- **H1:** Policy environment significantly influences educational innovation.
- **H2:** Teacher role significantly influences educational innovation.
- **H3:** Student performance significantly influences educational innovation.
- **H4:** Family factors significantly influence educational innovation.

2. Literature Review

2.1 Definition and Importance of Educational Innovation

Innovation in education refers to the introduction of new ideas, methods, or technologies aimed at improving teaching and learning experiences (Serdyukov, 2017). According to Guo (2020), innovative education is characterized by its specificity—recognizing that student innovation differs from expert innovation—and its comprehensiveness, which requires the development of human potential in all aspects, including emotion, wisdom, and will. It fosters a learner-centered approach where students become active participants in their learning journey.

2.2 Theoretical Influencing Factors

- **Policy Environment (PE):** This encompasses the regulations and guidelines set by government agencies. In China, the transition from "Quality Education" to "Innovative Education" is a core policy direction, requiring institutional autonomy and support for experimental pedagogy (Fu et al., 2016).

- **Teacher Role (TR):** Teachers are facilitators, role models, and inspirers. Beyond knowledge dissemination, they must use various resources to recognize their own roles in fostering creativity and critical thinking (Darling-Hammond, 2006).

- **Student Performance (SP):** This goes beyond academic grades. Following Polya's principle, what students think is "a thousand times more important" than what the teacher says (Du, 2012). It focuses on independent thinking and problem-solving abilities.

- **Family Factors (FF):** As a child's "first teachers," parents provide an irreplaceable enlightenment effect. However, issues such as excessive parental expectations or work-related absence can either catalyze or stifle a child's creative spirit (Xu, 2021).

3. Methodology

3.1 Research Design and Population

This study utilized a quantitative research design targeting primary schools in Nanning, Guangxi Province, China. The research population included representatives of teachers and parents. Based on a total population of 200, a sample size of 133 was determined using Taro Yamane's formula at a 95% confidence level.

3.2 Instrumentation and Data Collection

The primary instrument was a 5-point Likert scale questionnaire, ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). The questionnaire was divided into two parts: basic personal information and the measurement of research variables. The tool was validated using the Index of Item-Objective Congruence (IOC) by three experts, resulting in scores between 0.67 and 1.00. Reliability testing yielded Cronbach's Alpha coefficients above 0.7 for most variables (Policy Environment: 0.853, Student Performance: 0.760, Family Factors: 0.827), indicating high internal consistency. Data were collected via online social networks using an electronic link.

3.3 Data Analysis

Statistical data were processed using software to perform descriptive statistical analysis (mean and standard deviation), reliability analysis, correlation analysis, and multiple regression analysis to investigate the causal relationships between the independent and dependent variables.

4. Results

4.1 Demographic Analysis

Among the 133 respondents, 57.9% were male and 42.1% were female. The demographic was notably young, with 40.6% aged 18-30, reflecting the current trend of young educators and parents in the primary school system. Educationally, 54.9% held a Junior College degree, and 38.3% held a Bachelor's degree. The majority (37.6%) earned a monthly salary exceeding ¥3,000.

4.2 Descriptive Statistics of Variables

Respondents rated all variables at a "High" level, indicating strong recognition of these factors in the educational process:

- **Policy Environment:** Mean = 3.63 (High). Question 5 regarding policy encouragement for new methods scored highest (4.11).

- **Teacher Role:** Mean = 3.53 (High). Question 4 regarding the impact of innovation on student development scored highest (3.68).
- **Student Performance:** Mean = 3.60 (High). Student self-assessment scored highest (3.74).
- **Family Factors:** Mean = 3.47 (High). Parental support for innovation scored highest (3.59).

4.3 Correlation and Regression Analysis

Table 1

Correlations	PE	TR	SP	FF
Polivy environment	1			
Teacher Role	.581**	1		
Student performance	.454**	.554**	1	
Family factors	.487**	.605**	.688**	1

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

Correlation analysis showed significant positive relationships between all variables (coefficients between 0.454 and 0.688, $p < 0.01$). The Multiple Regression Analysis showed an Adjusted R-Square of 0.598, meaning the independent variables explain 59.8% of the variance in educational innovation.

Coefficients Analysis

Table 2

Model	Unstandardized		Standardized	t	Sig.
	Coefficients				
	B	Std. Error	Beta		
(Constant)	0.539	0.211		2.556	0.011*
X1: Policy environment	0.346	0.052	0.377	6.611	0.000*
X2: Teacher role	0.017	0.061	0.018	0.277	0.782
X3: Student performance	0.12	0.057	0.134	2.081	0.039*
X4: Family factors	0.385	0.065	0.401	5.945	0.000*

- **Policy Environment (Beta=0.377, Sig=0.000):** Significant positive effect.
- **Teacher Role (Beta=0.018, Sig=0.782):** No significant effect.
- **Student Performance (Beta=0.134, Sig=0.039):** Significant positive effect.
- **Family Factors (Beta=0.401, Sig=0.000):** Significant positive effect (Strongest predictor).

5. Discussion

5.1 The Dominance of Family and Policy

The findings support H1, H3, and H4. **Family Factors (H4)** emerged as the most critical determinant. This aligns with Xu (2021), who argues that the home atmosphere provides the initial enlightenment for innovation. If parents provide a supportive environment rather than just focusing on grades, students' creativity flourishes. **Policy Environment (H1)** also showed a strong influence, indicating that government initiatives, such as the transition to "Innovative Education," are providing the necessary structural mandate for change.

5.2 The Non-Significant Role of Teachers

Contrary to expectations, **H2 was not supported**. While teachers are the facilitators of learning, the results suggest that their individual role may be overshadowed by larger systemic forces or the heavy influence of the family unit in the Nanning context. As Fullan (2007) noted, educational change is a complex systematic project; a teacher's individual image often cannot decisively change the whole system if policy and family support are lacking.

6. Conclusion and Recommendations

6.1 Conclusion

Educational innovation in China is a multi-dimensional construct driven primarily by supportive national policies, positive student learning attitudes, and a nurturing family environment. The study proves that "Innovation" is not a isolated school-based outcome but a collaborative effort. Interestingly, in this specific region, the family unit holds more weight in driving innovation than the individual teacher's role.

6.2 Recommendations

- **For Policymakers:** Increase institutional autonomy for primary schools to allow for more experimental teaching methods.
- **For Educators:** Focus on shifting from "indoctrination" to "inquiry-based" methods, emphasizing students' self-assessment.
- **For Parents:** Balance high academic expectations with a creative home atmosphere. Encourage independent thinking rather than rote memorization.

- **Future Research:** Future studies should increase the sample size and explore different regions in China to compare innovation dynamics. Qualitative methods like in-depth interviews could further clarify why the teacher's role was perceived as non-significant.

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