Cultivating Teachers' Teaching Innovation Performance: An Exploration of Determinants through Professional Development Projects ——based on MoTeL database

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Coincidental Conversations-QIAN



Jestion

Qian Xuesen (1911.12.11-2009.10.31): Father of China's Missile and Spaceflight Program, co-Founder, Jet Propulsion Laboratory(NASA).

" why do our schools fail to cultivate outstanding talents?"

" compared to our investment in education, to our population size, to our economic power, why are there so few innovative talents coming out of our education system?" (2005)



The Fascinating World of MoTeL

| . . .

• attended a meeting related to INNOVA and MoTel in 2022.

• first time seeing the MoTeL Questionnaire shared, "mine".

- followed up on the database application permission.
- reviewed the data.
- began my research on the topic.

Background and

"Inn wat on care offer vital solutions, at affordable cost, to economic, social and cultural dilemmas" (OECD, 2018).

"promote educational innovation, reform the talent training model, and integrate the cultivation of scientific spirit, innovative thinking, creative ability and social responsibility throughout the entire process of education" by General Office of the State Council, PRC, 2016.

"By 2035, the comprehensive quality, professional level and innovation ability of teachers will be greatly improved." by General Office of the State Council, PRC, 2018.

The research niche is identified by the need to improve teachers' teaching innovation performance to continuously promote the rationality of teaching practice and cultivate innovative talents.

Numerous studies have delved into various aspects of teaching performance, innovation such its as connotations, implication factors, and potential improvement paths. However, there is a dearth of empirical research examining the influence of teachers' participation in professional development projects on their teaching innovation performance.



The questions I would like to answer in this research

• How is the teacher's teaching innovation performance?

· How does participation in teachers' professional development projects affect their teaching

innovation performance?

 \cdot What are the differences in teaching innovation performance based on teachers' personal,

position, and qualification characteristics?

Conten

introduction

The importance of teachers' teaching innovation

Literature review

 Definition of teaching innovation
 Factors affecting teachers' teaching innovation

Methodology

 Data source and sample selection
 Variable selection and sample characteristics

Data analysis

Findings and Conclusion



Innovation

"a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)" (OECD/Eurostat, 2018).

Teachers' teaching innovation

Teachers adopt continuously updated teaching concepts, content, methods, and means in the teaching process (Wang, et al., 2010), which teaching practice activities aimed at promoting and improving students' learning and well-being (OECD, 2012), and creatively solving teaching problems (Yang and Shen, 2006).

Factors affecting teachers' teaching



Data source and sample selection







This research defines teachers' **teaching innovation performance** as teachers' ability to adapt, develop, implement and evaluate new solutions aimed at improving the efficiency of teaching practice based on daily teaching and research work and activities.

Professional Development Projects based on which OECD (2009) generalized (9 categories): "Improving teaching through informal dialogues, courses and workshops, reading professional literature, attending educational conferences and seminars, professional development networks, individual and collaborative research, mentoring and peer observation, visiting other schools, and qualification courses".



Multiple Linear Model (Stata software)

 $Y_{n} = \beta_{0} + \beta_{1}X_{1} + \beta_{2}X_{2} + \beta_{3}X_{3} + \beta_{4}X_{4} + \beta_{5}X_{5} \boxtimes + \beta_{m}X_{m} + \varepsilon$

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Research result (1)



FOUR LEVELS OF TEACHERS' TEACHING INNOVATION PERFORMANCE

Research result 2

	B. professional	<u>Independen</u> <u>t variables</u>	Adaptation and development	Integration	Prepared description	Impact analysing
A. professional learning and	course and cooperation	professional learning and circulation	<mark>0.190***(0.0173)</mark>	<mark>0.226***(0.0174)</mark>	0.158***(0.0168)	0.175***(0.0161)
circulation	professional reflection and	professional reflection and reading	0.142***(0.0172)	0.150***(0.0174)	0.103***(0.0168)	0.124***(0.0160)
E. Professional training and dialogue	Colleague interaction and feedback	Colleague interaction and feedback	0.108***(0.0176)	0.0893***(0.0177)	0.107***(0.0171)	0.111***(0.0163)
		Professional training and dialogue	0.1000***(0.0180)	0.0812***(0.0181)	0.0973***(0.0175)	0.0526***(0.0167)
		professional course and cooperation	0.0483***(0.0181)	0.0506***(0.0183)	<mark>0.207***(0.0176)</mark>	0.214***(0.0168)

Research result (3)

Control/ Independent variables	Adaptation and development	Integration	Prepared description	Impact analysing
Gender	0.0279(0.0482)	0.0146(0.0485)	0.0756(0.0469)	0.171***(0.0448)
Teaching years	-0.110***(0.0193)	-0.129***(0.0194)	-0.0915***(0.0188)	-0.0812***(0.0179)
First pedagogical qualification	-0.0264(0.0548)	-0.0170(0.0552)	-0.123**(0.0534)	-0.0930*(0.0509)
Highest pedagogical qualification	0.0916*(0.0478)	0.0558(0.0481)	0.0976**(0.0465)	0.0878 * * (0.0444)
Grade level taught	0.0848***(0.0314)	0.0298(0.0316)	0.0489(0.0305)	0.0315(0.0292)
Subjects qualification	-0.00741(0.0345)	-0.00531(0.0347)	0.00556(0.0335)	0.0851***(0.0320)
Principal	-0.0829(0.0770)	-0.109(0.0775)	-0.0585(0.0749)	0.0908(0.0715)
Vice principal	-0.0287(0.0674)	0.0710(0.0678)	-0.0222(0.0656)	0.0560(0.0626)
Head of teacher department	0.0729(0.128)	0.190(0.129)	0.328***(0.125)	0.324***(0.119)
Class teacher	0.00142(0.0375)	0.00195(0.0378)	-0.00749(0.0365)	0.0124(0.0348)
Head of teacher workgroup/committee	0.0457(0.255)	-0.456*(0.257)	-0.402(0.248)	-0.167(0.237)
Mentoring (of student teachers, teacher trainees)	0.199***(0.0470)	0.116**(0.0473)	0.127***(0.0457)	0.0641(0.0436)
Student support	-0.0855*(0.0443)	-0.0727(0.0446)	-0.0520(0.0431)	-0.0473(0.0411)
Preparing internal institutional evaluations	-0.0136(0.0521)	-0.0339(0.0524)	-0.0326(0.0507)	0.0101(0.0483)
Expert or consultancy tasks	0.0562(0.0688)	0.0268(0.0693)	0.0790(0.0670)	-0.0386(0.0639)
Teachers' special examination	-0.0688(0.0429)	0.0139(0.0431)	0.0112(0.0417)	0.0705*(0.0398)
Category in the teacher career system	0.0829***(0.0312)	0.105***(0.0314)	0.112***(0.0304)	0.110***(0.0290)
Professional body members	0.105***(0.0380)	0.0745*(0.0383)	0.0973***(0.0370)	0.0279(0.0353)
Part-time tutor	0.139 * * * (0.0478)	0.0874*(0.0481)	0.0637(0.0465)	0.0933 * * (0.0444)



- · Encourage teachers to participate in comprehensive professional development projects.
- · Promote continuous professional learning for teachers, while also emphasizing the importance of understanding students' needs and creating an environment that facilitates the reciprocating cycle of knowledge application, practice, and reflection.
- Enhance opportunities for high-quality, advanced, qualification-oriented courses, individual guidance, and collaborative teaching with colleagues to encourage professional dialogue and collaboration.
- · Foster communication and collaboration among teachers across all levels and categories.
- · Advocate for the involvement of experts and leaders to provide leadership in this initiative.



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Thank you for your attention!

Any feedback would be greatly appreciated!