FACTORS INFLUENCING TEACHING PERFORMANCE IN HONGQI MIDDLE SCHOOL: AN APPLICATION OF INQUIRY-BASED TEACHING MODE IN CLASSROOM TEACHING

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ABSTRACT

This research aims to study the level of inquiry-based teaching in the classroom and to compare inquiry-based teaching in the classroom classified by personal factors. The population of teachers in junior middle school is 71. The sample consisted of 60 teachers at Hongqi Middle School and used a simple random sampling method. Data was collected through a questionnaire, and data analysis was performed using descriptive statistics, including frequency, percentage, mean, and standard deviation. And hypothesis testing used a t-test and an F-test at a statistical significance level of.05.

The results showed that:

Personal attribute factors such as age and operational experience can influence teaching performance using inquiry-based teaching differently. It affects inquiry-based teaching in the classroom in the field of opening to learning differently at the statistically significant .01 and .00 levels, respectively. Respondents aged 21–30 years old had different opinions on inquiry-based teaching in the classroom compared to respondents aged between 31–40 and 41–50 years old. In terms of operational experience, respondents with a long time to work can have different opinions on inquiry-based teaching in the classroom. Respondents with working experience under 5 years will be different from those with 5–10 years and more than 10 years or more.

Keywords: Inquiry teaching mode; classroom teaching

1. INTRODUCTION

With the development of the economy, the reform of the social, political, and economic systems, and the progress of people's lives and production modes, all will lead to the reform of national education. The

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development of national basic education plays a very important role in China's political, economic, cultural, scientific, and technological innovation and development. At present, there is still a big gap between China's basic education and the development of the times for the demand for talents, and China's basic education is facing a situation that must be reformed (Sun & Peng, 2020). It is understandable that most teachers tend to focus more on discipline, and achievement has not undergone a fundamental change, so the harm cannot be underestimated, which is also incompatible with the talents required by the development requirements of The Times. Although the country now advocates quality education, because of the traditional approach to exam-oriented education, it is a relatively long process. A new round of basic education curriculum reform requires basic education to reform the content, structure, and system of curriculum education in China and to build a basic curriculum education system matching quality-oriented education (Xue et al., 2021). In the student's view of the new curriculum reform, it is particularly emphasized that the students are the center of education, and the educators should be regarded as people rather than others. Therefore, this requires all educators to respect the students' roles in the classroom teaching environment, as well as to fully consider the initiative and enthusiasm of the students in the link between curriculum implementation and in the new curriculum reform, it also puts forward the adjustment of the curriculum structure, which includes the adjustment of classroom teaching design and organization. According to the single classroom design in traditional exam-oriented education, it requires the corresponding experience courses and comprehensive courses to be added to the new classroom structure. This contributes to the development of all-round students and fundamentally changes their high scores and low competencies (Wei, 2022; Rusnac & Rociupchin, 2023).

According to the literature review, there are various problems existing in current classroom teaching (Lestiyanawati, 2020; Cho et al., 2021; Hailikari et al., 2022). Firstly, some teachers only focus on a few students who are outstanding and active in class, which makes the remaining students become boring spectators. As a result, most students 'autonomy has not been mobilized, their potentials have not been fully played, and their interests, along with their enthusiasm for the course and learning, will be greatly reduced, hindering the development of students' exploration and creative spirit. Secondly, many primary school classes adopt the way of group cooperative learning, but teachers do not seriously analyze the principles of grouping and the detailed rules of division of labor before it. Hence, most group cooperation activities are just formalities. Therefore, the simple division of several groups and the superficial discussion of several questions are not very helpful to the students' cooperative learning ability and the learning efficiency of the students and the classroom. Thirdly, there is inefficiency in classroom teaching. The so-called classroom teaching effectiveness refers to the successful completion of the teaching objectives. However, in classroom teaching, some teachers design teaching problems that are unreasonable, such as: setting problems, which fail students to think critically; sometimes setting very difficult problems that no students in the class can solve, which cannot motivate the learners; or after answering the questions or conducting activities; therefore, the problems set by teachers have no role in improving students' abilities. Thus, in the current situation of education in China, many learners with high scores and low abilities are often cultivated (Guo, Huang, & Zhang, 2019; Wang & Guan, 2020).

Consequently, this study is interested in studying the factors related to teachers that can influence teaching performance in the classroom. Various interesting factors can include age, level of education, average monthly income, and operational experience (Kwon et al., 2020; Cascio, 2021). These can positively impact their ability to manage the classroom effectively and provide mentorship to students, their ability to effectively convey information and engage students, their adaptability, and their passion for education. In addition, this study employs inquiry-based teaching in the classroom to measure teaching performance. Inquiry-based teaching means adopting a teaching approach that emphasizes active student engagement in the learning process through asking questions, exploring topics, and seeking answers (Rehorek, 2004; Seneviratne et al., 2019; Deák et al., 2021). This approach encourages students to become curious, critical thinkers who take ownership of their learning. After the study, the result can be used as a guideline for the teachers to conduct the classroom to motivate students' personal and intellectual growth as well as lead to long-term learning benefits for the students to develop their habit of seeking answers, evaluating information critically, and continuing to learn independently throughout their lives.

2. OBJECTIVE

1. To study the level of inquiry-based teaching in the classroom.
2. To compare inquiry-based teaching in the classroom classified by personal factors.

3. HYPOTHESIS

Differences of personal factors including age, education level, average monthly income, and operational experience affect inquiry-based teaching in the classroom differently.

4. LITERATURE REVIEW

Personal Factors

This paper analyzes micro personal factors such as gender, years of education, salary experience, human capital level, and the influence of interaction items on the income of residents at different levels. The study found that the income gap due to gender reached more than 30%, and the higher the income level, the smaller the gender income gap. The lower the income level, the higher the educational yield. In particular, for low-income women, improving their educational background is one of the most effective ways to improve their personal income level. The higher the income level, the lower the return on work experience, and the return on education is generally higher than that on work experience, so education investment is more favorable for career development. Compared with different factors of income, women were found to have higher education returns than men. Industry monopoly and industry human capital both have a positive impact on personal income, and the degree of influence decreases with the increase in income. According to the research results, this paper puts forward the corresponding policy suggestions for improving the income level of residents and narrowing the income gap in the industry (Huang et al., 2021).

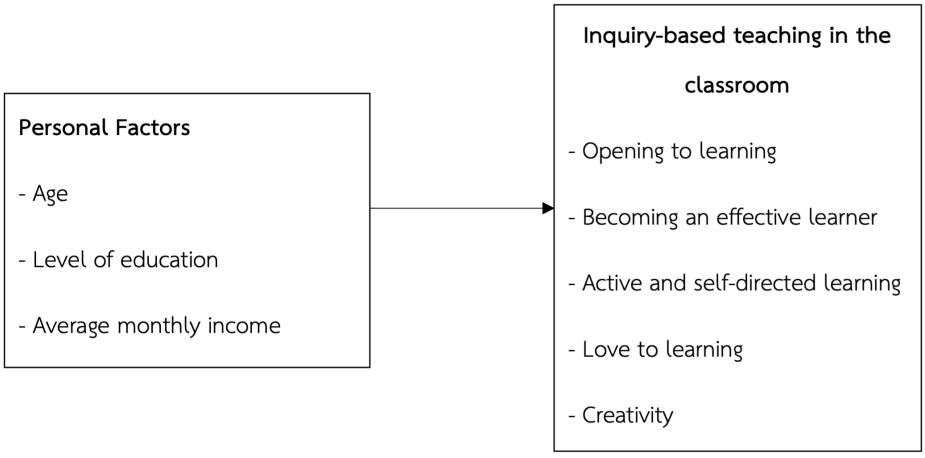
Inquiry-based teaching in the classroom

Chinese teachers should take the initiative to change the traditional teaching concept and teaching means and actively guide students to actively learn and explore, so as to cultivate students' independent learning ability and inquiry ability and effectively improve the teaching quality of junior middle school Chinese (Chen, 2022). Inquiry-based teaching in the classroom refers to the teaching process under the guidance of the teacher's inspiration, on the premise of students' independent learning and cooperative discussion, with the current teaching material as the basic inquiry content, the world around students and the actual life as the reference object, providing students with full free expression, questioning, inquiry, and discussion opportunities, and letting students, through individual, group, or collective, a variety of difficult doubts try to live. Inquiry-based teaching in the classroom also includes opening to learning, which refers to organizing the planned learning in various forms and means, as well as becoming an effective learner, which refers to interest-driven and task-driven learning. In addition, original and independent learning is also important to the inquiry-based teaching concept; it refers to the student's ability to independently analyze, explore, practice, question, create, and use other methods to achieve the learning goals. The other points, such as love of learning, which refers to the like of learning new things, whether in class or in life; optimism for the future, which refers to having a tolerant attitude towards people and things; and ability to use skills to study, which acquire knowledge and solve problems, are significant to include in the inquiry-based teaching concept.

5. CONCEPTUAL FRAMEWORK

Figure 1

Conceptual framework



6. RESEARCH METHODOLOGY

1. Population and sample

The population consists of 71 junior middle school teachers. The sample consisted of 60 administrators and teachers at Hongqi Middle School, using a simple random sampling method.

2. Research Instrumental

Research tools are a questionnaire divided into two parts, including (1) personal information such as age, education level, average monthly income, and operational experience. And (2) inquiry-based teaching in the classroom can include opening to learning, becoming an effective learner, active and self-directed learning, love of learning, creativity, optimism for the future, applying skills to learn, and solving problems. This questionnaire has quality testing by content validity and reliability analysis from Cronbach's alpha coefficient using criteria of 0.7 or higher.

3. Data analysis

Data analysis is done using descriptive statistics, including frequency, percentage, mean, and standard deviation. And hypothesis testing used a t-test and an F-test (one-way ANOVA) at a statistical significance level of.05.

7. RESULTS

1. Data analysis results indicated that the majority of respondents were female (75.0%), most were aged 41–50 years (45.0%), had a bachelor's degree (55.0%), had a monthly average income of 10,001–20,000 Yuan, and had 5–10 years of operational experience (45.0%). For studying inquiry-based teaching in the classroom, the result indicated that the respondents had moderate opinions on inquiry-based teaching in the classroom ($\bar{X}$= 3.30, S.D. = 0.62). Considering each aspect, it was found that opening to learning ($\bar{X}$= 3.14, S.D. = 0.80), becoming an effective learner ($\bar{X}$= 3.43, S.D. = 0.74), active and self-directed learning ($\bar{X}$= 3.23, S.D. = 0.69), love to learn ($\bar{X}$= 3.32, S.D. = 0.65), creativity ($\bar{X}$= 3.32, S.D. = 0.64), optimism for the future ($\bar{X}$= 3.27, S.D. = 0.81), applying skills to learn, and solving problems ($\bar{X}$= 3.38, S.D. = 0.79) are at a satisfactory level.

2. Hypothetical test results

Table 1

The results of the hypothesis testing

Inquiry-based teaching	Age (F-test)	Level of education (t-test)	Average monthly income (F-test)	Operational experience (F-test)
Opening to learning	**3.828****	0.550	2.445	**8.048*****
	(Sig. = .01)	(Sig. = .58)	(Sig. = .07)	(Sig. = .00)
Becoming an effective learner	0.486	-1.333	0.508	1.079
	(Sig. = .69)	(Sig. = .19)	(Sig. = .68)	(Sig. = .35)
Active and self-directed learning	0.126	-1.311	1.127	0.056
	(Sig. = .94)	(Sig. = .20)	(Sig. = .35)	(Sig. = .95)
Love to learning	0.243	-0.179	0.997	0.309
	(Sig. = .87)	(Sig. = .86)	(Sig. = .40)	(Sig. = .74)
Creativity	0.425	0.424	0.809	0.402
	(Sig. = .74)	(Sig. = .67)	(Sig. = .49)	(Sig. = .67)
Optimism for the future	0.001	-0.412	2.280	0.810
	(Sig. = 1.00)	(Sig. = .68)	(Sig. = .09)	(Sig. = .45)
Apply skills to learn, and solve problems	0.727	-0.249	1.987	2.820
	(Sig. = .54)	(Sig. = .81)	(Sig. = .13)	(Sig. = .07)
Overall	0.570	-0.416	1.101	1.156
	(Sig. = .64)	(Sig. = .68)	(Sig. = .36)	(Sig. = .32)

***** Statistically significant at .05 level.

****** Statistically significant at .01 level.

******* Statistically significant at .001 level.

From Table 1, it is found that personal attribute factors such as age and operational experience can influence teaching performance using inquiry-based teaching differently. It affects inquiry-based teaching in the classroom in the field of opening to learning differently at the statistically significant.01 and.00 levels, respectively. Respondents aged 21–30 had different opinions on inquiry-based teaching in the classroom compared to respondents aged between 31–40 and 41–50 years old. In terms of operational experience, respondents with a long time to work can have different opinions on inquiry-based teaching in the classroom. Respondents with working experience under 5 years will be different from those with 5–10 years and more than 10 years or more.

8. DISCUSSIONS

1. The level of education, average monthly income, and operational experience of teachers can greatly influence their teaching performance when implementing Inquiry-based teaching. Research has shown that teachers with higher levels of education tend to have a stronger understanding of pedagogy and are better equipped to implement Inquiry-based teaching methods effectively (Teig et al., 2018). Additionally, teachers who have been in the field for a longer period of time are likely to have more experience with Inquiry-based teaching and are better able to adapt their methods to the needs of their students (Cho et al., 2019). Moreover, the average monthly income of teachers can also impact their ability to effectively implement Inquiry-based teaching. Teachers who are more financially stable may have access to resources and professional development opportunities that allow them to improve their teaching skills, while those with lower incomes may struggle to access such resources (Aldeman, 2018). In terms of the impact on student learning, research has shown that teachers who are more educated, experienced, and financially stable are better able to foster effective learning in their students. These teachers are more likely to encourage active and self-directed learning, foster a love of learning, promote creativity, instill optimism for the future, and help students apply skills to learn and solve problems effectively (Benekos, 2016).

2. Personal attributes including age and operational experience can have an impact on its openness to inquiry teaching in the classroom. It was statistically significant at the 0.01 and 0.00 levels, respectively. Age was 21 – 30 years, and they differ from those aged 31 – 40 and 41 – 50 years. More than 10 years of work experience is different than 5-10 years of task experience. Teaching experience, as a realistic existence, exists widely in the teachers' teaching practice. It is a summary of the knowledge and skills acquired by individual teachers in the teaching practice, as well as the regular methods formed, which are different from the teaching knowledge, teaching theory and teaching wisdom. The subject of the teaching experience is the teacher individual of teaching concept, teaching understanding and teaching behavior, the field is in teaching each link, is produced in practice, and with its practice, its purpose is to promote the effective development of teaching and teachers' professional growth, practical knowledge, practical theory, teaching wisdom is its external representation. Xiaoling and Xuan (2022) found that teachers' teaching experience is a kind of practical knowledge generated in the teaching process, with the connotation characteristics of knowledge, individuality, and regularity. Teaching experience in the "learning-centered" teaching mode has the characteristics of latent recessive, practical and situational, not only no weakening effect, and play the important practice source of pedagogy theory, optimize the "guiding" teaching behavior, help students' independent learning, improve students' learning efficiency and promote the teachers' professional development, so as to strengthen the guidance of students' learning behavior, help students improve the quality of learning (Zhang, Admiraal, & Saab, 2021).

9. ORIGINALITY AND BODY OF KNOWLEDGE

The study on the factors influencing teaching performance in Hongqi Middle School and its application of an inquiry-based teaching mode in classroom teaching offers a unique and original contribution to the body of knowledge in the field of education. This research is significant since it focuses on the Hongqi Middle School and investigates the elements that influence teaching performance in this unique environment. This research offers a comprehensive and thorough examination of the several elements involved by concentrating on a particular school. It gives significant observations and consequences that are beneficial for educators, administrators, and policymakers not only in Hongqi Middle School but also in other similar institutions. Moreover, the use of an inquiry-based teaching method in classroom instruction is a relatively new strategy that has attracted interest due to its ability to improve students' cognitive and critical thinking abilities. Through an analysis of the implementation and consequences of this instructional approach at Hongqi Middle School, this research contributes to the existing knowledge by presenting empirically supported results on the efficacy of inquiry-based teaching in an actual educational setting. This not only enhances the comprehension of efficient pedagogical approaches but also functions as a significant asset for educators seeking to implement cutting-edge and evidence-based strategies in their own classrooms.

10. RESEARCH RECOMMENDATIONS

1. Suggestions for applying the research results

1. according to the study found that different ages can have an impact on openness to inquiry teaching in the classroom, the school should promote a culture of lifelong learning among all teachers, regardless of age and emphasize the importance of staying current with developments in their subject area, pedagogical approaches, and educational technology. In addition, the school should provide opportunities for professional development and training as well as offer workshops, seminars, and courses that allow teachers to enhance their teaching skills and keep up with best practices. This can close the gap of different age in the school.

2. according to the study found that different operational experience can have an impact on openness to inquiry teaching in the classroom, the school should offer ongoing professional development opportunities for all teachers. These programs should be designed to keep educators updated on the latest teaching methods, educational research, and technology tools. In addition, the school should encourage experienced teachers to collaborate with their peers, including newer teachers. This can create opportunities for knowledge exchange and mentorship. More experienced educators can share their insights and strategies, while newer teachers can offer fresh perspectives.

2. Suggestions for further research

Regarding the study related to factors influencing teaching performance in Hongqi middle school: an application of inquiry-based teaching mode in classroom teaching, the next study should investigate the effectiveness of teacher training and professional development programs in preparing educators to implement inquiry-based teaching effectively as well as explore how ongoing support and mentorship influence teaching performance.

In addition, the future research should explore the perceptions and experiences of students who are taught using the inquiry-based teaching mode as well as assess their engagement, motivation, and attitudes toward learning, as well as their overall satisfaction with the teaching approach. Furthermore, the future research should consider the cultural and contextual factors that may impact the implementation of inquiry-based teaching in Hongqi Middle School and also investigate how cultural norms, school policies, and community expectations influence teaching practices. Lastly, the next study should focus on conducting longitudinal studies to examine the long-term impact of inquiry-based teaching on student learning outcomes, including academic achievement and critical thinking skills. This can help assess the sustainability of the teaching mode.

REFERENCE

Aldeman, C. (2018). The impact of salary increases on teacher recruitment and retention: Evidence from a natural experiment. *Education Finance and Policy, 13*(3), 200-223.

Benekos, P. J. (2016). How to be a good teacher: Passion, person, and pedagogy. *Journal of Criminal Justice Education, 27*(2), 225-237.

Cascio, E. U. (2021). Early childhood education in the United States: What, when, where, who, how, and why. National Bureau of Economic Research.

Chen, C. Y. C., Byrne, E., & Vélez, T. (2022). Impact of the 2020 pandemic of COVID-19 on families with school-aged children in the United States: Roles of income level and race. *Journal of Family Issues, 43*(3), 719-740.

Cho, H. J., Zhao, K., Lee, C. R., Runshe, D., & Krousgrill, C. (2021). Active learning through flipped classroom in mechanical engineering: improving students' perception of learning and performance. *International Journal of STEM Education, 8*(6), 1-13.

Cho, W., & Appleton, J. J. (2019). Longitudinal associations between teacher and school characteristics and their perceptions, and student outcomes: Multilevel multivariate meta-analysis. *Review of Educational Research, 8*(5), 717-760.

Deák, C., Kumar, B., Szabó, I., Nagy, G., & Szentesi, S. (2021). Evolution of new approaches in pedagogy and STEM with inquiry-based learning and post-pandemic scenarios. *Education Sciences, 11*(7), 319.

Guo, L., Huang, J., & Zhang, Y. (2019). Education development in China: Education return, quality, and equity. *Sustainability, 11*(13), 3750.

Hailikari, T., Virtanen, V., Vesalainen, M., & Postareff, L. (2022). Student perspectives on how different elements of constructive alignment support active learning. *Active Learning in Higher Education, 23*(3), 217-231.

Huang, X., Chin-Hsi, L., Mingyao, S., & Peng, X. (2021). What drives teaching for creativity? Dynamic componential modelling of the school environment, teacher enthusiasm, and metacognition. *Teaching and Teacher Education, 107*, 103491.

Kwon, K. A., Ford, T. G., Salvatore, A. L., Randall, K., Jeon, L., Malek-Lasater, A., ... & Han, M. (2020). Neglected elements of a high-quality early childhood workforce: Whole teacher well-being and working conditions. *Early Childhood Education Journal, 50*, 157-168.

Lestiyanawati, R. (2020). The strategies and problems faced by Indonesian teachers in conducting e-learning during COVID-19 outbreak. *CLLiENT (Culture, Literature, Linguistics, and English Teaching), 2*(1), 71-82.

Rehorek, S. J. (2004). Inquiry-based teaching. *The American Biology Teacher, 66*(7), 493-499.

Rusnac, S., & Roşciupchin, D. (2023). The influence of social and demographic characteristics on modern students' self-confidence and assertiveness. *Revista de Cercetare si Interventie Sociala, 81*, 7-24.

Seneviratne, K., Hamid, J. A., Khatibi, A., Azam, F., & Sudasinghe, S. (2019). Multi-faceted professional development designs for science teachers' self-efficacy for inquiry-based teaching: a critical review. *Universal Journal of Educational Research, 7*(7), 1595-1611.

Sun, S. Y., & Peng, L. H. (2020). Study of the virtual reality education and digitalization in China. *Journal of Physics: Conference Series, 14*(1), 1-7.

Teig, N., Scherer, R., & Nilsen, T. (2018). More isn't always better: The curvilinear relationship between inquiry-based teaching and student achievement in science. *Learning and instruction, 5*(6), 20-29.

Wang, Y., & Guan, H. (2020). Exploring demotivation factors of Chinese learners of English as a foreign language based on positive psychology. *Revista Argentina de Clinica Psicologica, 29*(1), 851-861.

Wei, P. (2022). The impact of social support on students' mental health: A new perspective based on fine art majors. *Frontiers in Psychology, 1*(3), 41-57.

Xiaoling, P., & Xuan, Z. (2022, May). The transformation of artificial intelligence in the 5G era and the impact on education. In *2022 IEEE 2nd International Conference on Electronic Technology, Communication and Information (ICETCI)* (pp. 903-907). IEEE.

Xue, Q., Xie, X., Liu, Q., Zhou, Y., Zhu, K., Wu, H., ... & Song, R. (2021). Knowledge, attitudes, and practices towards COVID-19 among primary school students in Hubei Province, China. *Children and youth services review, 1*(20), 105735.

Zhang, X., Admiraal, W., & Saab, N. (2021). Teachers' motivation to participate in continuous professional development: relationship with factors at the personal and school level. *Journal of Education for Teaching, 47*(5), 714-731.