Factors Affecting Teaching Quality: Students' Perception, Xi'an Kedagaoxin University, Xi'an City, China

Yan Lu*, Kingkaew Suwankhiri and Phanthida Laophuangsak
Master of Education Program in Educational Administration
Faculty of Business Administration, Southeast Asia University
E-mail:1256164885@qq.com

วันที่รับบทความ : 29 กันยายน 2567, วันที่แก้ไขบทความ ครั้งที่ 1 : 11 พฤศจิกายน 2567
วันที่ตอบรับการตีพิมพ์ : 29 พฤศจิกายน 2567

Abstract

This research aimed to study factors affecting teaching quality: students' perception, Xi'an Kedagaoxin University, Xi'an, China. The study was quantitative research by using a questionnaire as the instrument for collecting data. The sample consists of 200 students from Xi'an Kedagaoxin University, selected using and stratified random sampling. Data were analyzed by descriptive statistics in the forms of frequency distribution, percentage, mean, and standard deviation. Moreover, to verify the relationship between independent variables and dependent variables Pearson's correlation analysis, and the hypothesis testing by multiple regression analysis.

The research results found that, the relationship between Motivation, Teaching Methods, Teaching Environment, and Learning Resources impact teaching quality at Xi'an Kedagaoxin University with statistical significance at the 0.05 level. The recommendations from the research are as follows: in terms of motivation, positive strategies and policies, and rewards should be used to increase motivation; in terms of teaching methods, a variety of teaching strategies should be used to stimulate student interest and participation; in terms of teaching environment, classroom infrastructure facilities and the psychological environment should be improved; and in terms of learning resources, learning media and various digital media should be improved.

Keywords: Teaching quality, Motivation, Teaching methods, Teaching environment, Learning resources

1. Introduction

With the advancement of education and societal progress, the quality of higher education has become a significant focus, especially within China's educational system. Teaching quality evaluation plays a central role in educational assessments, as it directly impacts the development of high-level skills and the overall growth of the national economy. Continuous evaluation of teaching quality is essential for identifying areas of improvement and encouraging educators to refine their instructional methods (Han, 2021). Policies such as the "Double First-Class" initiative and the "Overall Plan for Deepening Reform of the Educational System" reflect China's strategic efforts to enhance higher education through curriculum reform, faculty development, and modernization of teaching practices (Ministry of Education of the People's Republic of China, 2015; State Council of the People's Republic of China, 2018).

The Ministry of Education's Higher Education Quality Assurance Framework provides comprehensive guidelines for evaluating teaching effectiveness, student outcomes, and institutional performance, ensuring alignment with national educational standards (Ministry of Education of the People's Republic of China, 2015). High-quality teaching has a profound effect on student achievement and long-term development, as demonstrated in studies by Hattie (2008). Effective teaching practices help close socio-economic gaps while fostering critical thinking, personal growth, and lifelong learning (Linda, 1999). Moreover, engaging pedagogical methods and strong teacher-student relationships play a pivotal role in enhancing student motivation and academic success (Fredricks et al., 2004; Pianta et al., 2012).

This research study is important because the assessment of teaching quality is a key factor in the development of higher education, which affects the development of higher skills and the economic growth of a country. This study will help identify the factors that affect the quality of teaching in Xi'an Kedagaosin University, leading to improvements in teaching practices and learning environments. Understanding

these factors will help improve the efficiency of resource allocation, promote student engagement, and improve academic achievement.

In this context, the researcher seeks to examine the factors affecting teaching quality at Xi'an Kedagaoxin University. This investigation is vital for identifying strategies to enhance instructional practices and optimize learning environments. By understanding these factors, it is possible to refine teaching methodologies, improve classroom conditions, and allocate resources more effectively, ultimately contributing to increased student engagement and academic performance.

2. Research objective

To study factors affecting teaching quality: students' perception, Xi'an Kedagaoxin University, Xi'an, China.

3. Literature Review

Teaching quality

The effectiveness of instructional practices in promoting student engagement, deep learning, and academic achievement. It involves creating supportive learning environments where educators demonstrate expertise, pedagogical skills, and self-efficacy. Key elements include subject matter knowledge, empathy, active student participation, and timely feedback. High-quality teaching enhances student outcomes, addresses educational disparities, and supports long-term development, with continuous professional growth being essential for maintaining teaching standards (Hattie, 2008; Fredricks et al., 2004).

Motivation

Research demonstrates a strong positive link between student motivation and teaching quality, with intrinsic motivation significantly impacting the latter (Dahl & Smimou, 2011). Motivated students actively engage, attend classes, and participate in learning activities, boosting educational outcomes (Murwanashyaka et al., 2024). Motivation, readiness, and commitment to learning are key predictors of academic performance and teaching effectiveness (Ren, Y., 2023). Teacher support and peer tutoring further enhance student motivation and success (Lunkina et al., 2023; Boadu et al., 2023). Hence, motivation is hypothesized to affect teaching quality.

Teaching Methods

Research underscores the critical role of teaching methods in influencing teaching quality, which directly affects student outcomes and employability. Pedagogical attributes and research-informed practices positively impact teaching quality, with the latter mediating this relationship (Ikediashi et al., 2023). Integrating theoretical frameworks, ethical values, and moral guidance into teaching enhances student engagement (Kowang et al., 2022). Aligning methods with educational standards, emphasizing evidence-based practices, technology, and assessments, improves efficacy (Meng, 2023). Students favor active learning and ICT for practical skills and deeper understanding (Vaclavik et al., 2022). Thus, teaching methods are hypothesized to affect teaching quality.

Teaching Environment

Research highlights the crucial role of the teaching environment in enhancing teaching quality. A conducive environment boosts student engagement and supports effective instruction (Gao and Abidin, 2023). Inclusive classrooms and strong teacher development programs also positively influence student performance, linking the environment, teacher growth, and student success (Arifin et al., 2024). Classroom atmosphere, including organization and mutual respect, is key to effective teaching (Ofoghi et al., 2024). Therefore, improving the teaching environment is vital for elevating teaching quality (Helmke et al., 1986). Therefore, teaching environment is hypothesized to affect teaching quality.

Learning Resources

Research shows that learning resources significantly enhance teaching quality. High-quality curricula, textbooks, and technology improve content delivery and instruction (Suyatmo et al., 2024). Interactive materials, such as multimedia and educational software, boost student engagement and motivation (Jonassen et al., 2008), while diverse resources address different learning needs, ensuring accessibility for all students (Fleming, 2024). Therefore, learning resources are hypothesized to affect teaching quality.

4. Research Hypothesis

Therefore, this study proposes the following hypotheses:

hypothesis 1 Motivation affects the teaching quality.

hypothesis 2 Teaching methods affect the teaching quality.

hypothesis 3 Teaching environment affects the teaching quality.

hypothesis 4 Learning resources affect the teaching quality.

5. Conceptual Framework

By reviewing related literature, the researcher could synthesize the research conceptual framework as shown in figure 1 below:

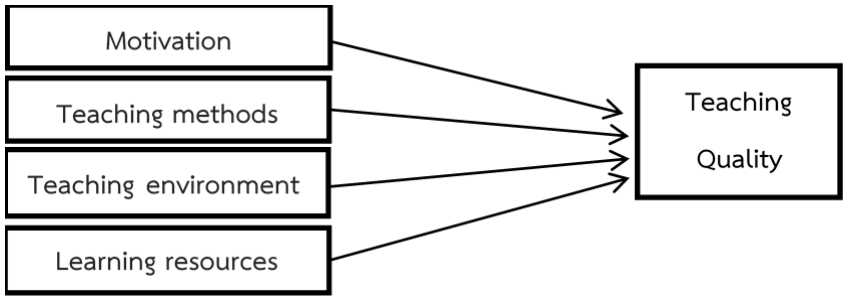

Figure 1 Conceptual framework

6. Research Methodology

Population and Sample

In this study, the population consisted of students from Xi'an Kedagaoxin University. According to the data retrieved from the official website of the university, the total number of senior students enrolled is 3,514. The sample size was determined using Daniel Soper's principles, based on an effect size of 0.10, statistical power of 0.95, four predictors, and a significance level of 0.05, was calculated to be 191 students. Data were collected through questionnaires distributed to students, yielding a total of 200 responses. The data collection employed stratified random sampling to ensure an equal chance of selection for each student.

Research Tools

The questionnaire used in this study was developed based on a thorough literature review and consists of two sections. The first section gathers basic demographic information, such as gender, age, major, grade, and study mode. The second section measures variables related to teaching quality, including four

predictive variables and one criterion variable. The scale includes 37 items with responses ranging from "strongly disagree" to "strongly agree," assigned values from 1 to 5, where higher values indicate stronger agreement.

Reliability and validity

The research examined the validity of the revised questionnaire's Content evaluation from three experts. It was found that all questions had anl0C between .67-1.00, which is greater than .50. The reliability of the questionnaire was evaluated using Cronbach's alpha for five variables scale: motivation, teaching methods, teaching environment, learning resources, and teaching quality. Each variable scale exhibited a Cronbach's alpha exceeding 0.70, indicating the questionnaire's suitability for data collection.

Data Collection

The research instrument is a questionnaire by sending a QR code through online channels to Xi'an Kedagaoxin University 200 senior students to collect data. And the researcher distributed the questionnaire to senior counselors and teachers at the Xi'an Kedagaoxin University to senior students.

Data Analysis

The study employed a quantitative research methodology. Following the completion of data collection, Jamovi 2.3.21 was utilized to examine and analyze the data systematically. The analyses conducted included descriptive analysis, correlation analysis, and multiple regression analysis (By utilizing the 'enter' selection method, this approach facilitates the simultaneous examination of multiple predictor variables' impacts on the outcome variable. Moreover, it provides predictive capabilities while accounting for the influence of other variables).

7. Research Results

7.1 Analysis of Respondent’s Demographics

Analysis of demographic data including gender, age, major, grade rank in this major, mode of study, and grade of 200 students in Xi'an Kedagaoxin University in Xi’an City, China.

Table 1 Analysis of demographic factors of university students

Personal factors	frequency	percentage
Gender		
Male	99	49.5
Female	101	50.5
Age		
22 years old	83	41.5
23 years old	97	48.5
24 years old	20	10.0

Table 1 Continue

Personal factors	frequency	percentage
Major		
Biological Sciences	24	12.0
Business and Management	20	10.0
Communications	25	12.5
Education	22	11.0
Engineering	23	11.5
Fine and Performing Arts	21	10.5
Health Sciences	24	12.0
Humanities	20	10.0
Physical Sciences, Mathematics and Computer Science	21	10.5
Grades rank in this major		
top30%	63	31.5
30%-50%	90	45.0
50%-70%	30	15.0
70%later	17	8.5
Mode of study		
full-time education	200	100
Grade		
Senior	200	100

From the above Table 1, it is found that there were 200 students, most of whom were female 50.5%, aged 23 years old, accounting for 48.5%, Their academic disciplines were diverse, with significant representation in Biological Sciences (12.0%), Communications (12.5%), and Health Sciences (12.0%). Regarding academic performance, 31.5% ranked in the top 30% of their cohort, while 45.0% fell between the 30th and 50th percentiles. All respondents (100%) were full-time senior students.

7.2 Analysis level of factors affecting teaching quality: students' perception, Xi'an Kedagaoxin University, Xi'an, China.

Table 2 Descriptive Statistics Analysis of Variables

Factors affecting teaching quality	Mean	SD	Skewness	Kurtosis
Motivation	3.70	0.839	-0.723	0.185
Teaching Methods	3.87	0.726	-0.631	0.563
Teaching Environment	3.63	1.01	-0.807	-0.230
Learning Resources	4.00	0.746	-1.10	1.47
Teaching Quality	4.07	0730	-1.25	1.68

From Table 2, it is observed that learning resources had the highest mean value of 4.00, while the teaching environment had the lowest mean value of 3.63. Notably, the standard deviations for all variables, except for the teaching environment, are less than 1, suggesting minimal fluctuations in the original sample data obtained through the questionnaire and a high level of consensus among respondents. Skewness<0 indicates that the data distribution is left. Skewed compared to a normal distribution, meaning there are more extreme values on the left side of the data. Except for the teaching environment, Kurtosis>0 indicates that the overall data distribution is more peaked or leptokurtic compared to a normal distribution.

Table 3 Analysis of relationships between motivation, teaching methods, teaching environment, learning resources, and teaching quality.

	Motivation	Teaching Methods	Teaching Environment	Learning Resources	Collinearity Statistics	
					Tolerance	VIF
Motivation					0.831	1.20
Teaching Methods	0.395***				0.785	1.27
Teaching Environment	0.209**	0.285***			0.844	1.19
Learning Resources	0.178*	0.251***	0.325***		0.864	1.16
Teaching Quality	0.484***	0.456***	0.540***	0.431***		

***p<0.001

From Table 3 reveals a significant positive correlation between motivation, teaching methods, teaching environment, learning resources, and teaching quality. The Pearson correlation coefficients for these relationships are 0.484, 0.456, 0.540, and 0.431, respectively.

Table 4 Analysis of factors affecting teaching quality: students' perception, Xi'an Kedagaoxin University, Xi'an, China.

	b	SE	T	p	β	Collinearity Statistics
						VIF
Constant	0.621	0.2633	2.36*	0.019		
Motivation (MOT)	0.260	0.0477	5.45***	<0.001	0.299	1.20
Teaching Methods(TEM)	0.183	0.0567	3.22***	0.001	0.182	1.27
Teaching Environment (TEE)	0.258	0.0395	6.53***	<0.001	0.355	1.19
Learning Resources (RES)	0.212	0.0526	4.02***	<0.001	0.216	1.16

R^2=0.513, Adjusted R^2 = 0.503, F=51.3, p=0.000, *p<0.05 ,** p<0.01, ***p<0.001

From Table 4, The data presented in the table shows the following :conclusions

1)The fit of this linear regression model is strong, with an R-squared value of 0.513. This implies that the four predictive variables - Motivation (MOT), Teaching Methods (TEM), Teaching Environment (TEE), and Learning Resources (RES) - collectively account for 51.3% of the variance in teaching quality. Therefore, the results of this data analysis effectively reflect the influence of these predictive variables on the criteria variable, teaching quality.

2) The VIF values for all four predictive variables in this multiple regression analysis are less than 5, indicating the absence of multicollinearity among them. This signifies that the analysis results are both accurate and reliable.

3) The data reveals the significance of this regression equation, with an F-value of 51.3 and each p-value less than 0.001. This indicates the meaningfulness of the model, demonstrating that the four predictive variables have a significant impact on the criteria variable, teaching quality.

4) Among the four predictive variables, all variables exhibit significant positive effects on teaching quality. Motivation ($p<0.001$), teaching methods ($p=0.001$), teaching environment ($p<0.001$), and learning resources ($p<0.001$) all significantly and positively influence teaching quality.

Finally, based on the above analysis, the regression equation between predictive variable and criteria variable is as follow:

Regression equation in unstandardized coefficients

$$TEQ = 0.621 + 0.260MOT + 0.183TEM + 0.258TEE + 0.212RES \quad (1)$$

Regression equation in standardized coefficients

$$TEQ = 0.299MOT + 0.182TEM + 0.355TEE + 0.216RES \quad (2)$$

Standardizing the partial regression coefficients allows for the comparison of the magnitudes of the effects of different independent variables on the dependent variable. From equation (2), founded that the most factor affect teaching quality at the significance level of 0.05 are teaching environment had a regression coefficient ($\beta 3$) of 0.355. Motivation had a regression coefficient ($\beta 1$) of 0.299, Learning Resources had a regression coefficient ($\beta 4$) of 0.216, and Teaching Methods had a regression coefficient ($\beta 2$) of 0.182.

8. Research Discussion

The results of the statistical hypothesis testing have identified four principal factors that significantly influence the teaching quality at Xi'an Kedagaoxin University, as outlined below:

Motivation is a critical determinant, influencing teaching quality through various mechanisms such as student engagement with course material and the alignment of educational objectives with personal aspirations. This is supported by Dahl and Smimou (2011) and Murwanashyaka et al. (2024), who demonstrate that high-quality teaching enhances both intrinsic and extrinsic motivation, thereby improving academic performance.

Teaching methods also play a pivotal role, as they shape the ways in which students engage with and comprehend educational content. Effective teaching methods, which include a range of instructional techniques and collaborative learning activities, are crucial for achieving positive educational outcomes. This relationship is affirmed by Ikediashi et al. (2023), who highlight the significance of pedagogical strategies in enhancing teaching quality.

The teaching environment further influences teaching quality by affecting student motivation and engagement. A well-maintained and supportive classroom environment, as identified by Gao and Abidin (2023) and Arifin et al. (2024), is essential for fostering effective learning experiences.

Additionally, learning resources are integral to teaching quality, with their adequacy and relevance directly impacting student engagement and educational effectiveness. Research by Suyatmo et al. (2024) underscores the importance of high-quality, well-structured resources in supporting effective teaching.

Collectively, these findings validate the research hypotheses and underscore the critical role of motivation, teaching methods, teaching environment, and learning resources in enhancing teaching quality at Xi'an Kedagaoxin University.

9. Recommendation

9.1 Recommendation for utilizing the research results

9.1.1 Motivation affects the quality of teaching. Therefore, universities should adopt clear strategies and policies to increase student motivation and use positive feedback and rewards to increase motivation.

9.1.2 Teaching methods affect the quality of teaching. Therefore, universities should adopt a variety of teaching strategies, such as interactive teaching, case studies and project-based learning, to stimulate student interest and engagement.

9.1.3 Teaching environment affects the quality of teaching. Therefore, universities should improve facilities, improve the psychological environment in the classroom and maintain teaching infrastructure.

9.1.4 Learning resources affect the quality of teaching. Therefore, universities need to improve learning media, including textbooks, multimedia and a variety of digital resources, and invest in laboratory equipment for better student engagement and outcomes.

9.2 Recommendations for further research

Based on the findings in the research, there are suggestions for further research as follows:

9.2.1 Broaden Sampling: The study is limited to students from Xi'an Kedagaoxin University, restricting its generalizability. Future research should include students from multiple institutions across China for a more comprehensive understanding and comparative analysis.

9.2.2 Add Qualitative Methods: The study relies solely on quantitative data, which may not capture all factors affecting teaching quality. Future research should integrate qualitative methods, such as interviews or focus groups, for deeper insights.

9.2.3 Improve Explanatory Power: With an R-squared value of 0.513, the study explains 51.3% of the variance in teaching quality. Future research should incorporate additional variables, such as student engagement and curriculum design, to enhance the model's accuracy.

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