# Mediation Effects of Curriculum and Learning on the Relationship between Teachers' Leadership and Students' Core Competence in Chongqing Area

LYu Jiaqing
Sukhum Moonmuang
Sataporn Pruettikul
Bangkokthonburi University
E-mail: 6363202002@bkkthon.ac.th
Received : 16 October 2023
Revised : 27 June 2024
Accepted : 27 June 2024

**ABSTRACTS**

The main objectives of this study were: (1) to study the effect of factors affecting students' core competence, (2) to study the mediation effect of curriculum on the relationship between teacher leadership and students' core competence, and (3) to study the mediation effect of learning on the relationship between teacher leadership and students' core competence.

Population of this study were undergraduate students who will graduated from art colleges in Chongqing area in academic year 2023, sample were selected from 10 art colleges in Chongqing. In order to achieve these goals, the proportional stratified random sampling method was adopted, and the sample size was calculated and determined by G*Power software. The sample size were not less than 27 students in each college, and the minimum requirement sample size were 270 students. A survey questionnaire was used to collect data, and 277 questionnaires were received back, with 100% rate. Data analyses were employed descriptive statistic demographic information and structural equation modeling (SEM) for hypothesis testing.

Research findings were, (1) factor teacher leadership and learning had positively affected on students' core competence, but factor curriculum had not affected, (2) curriculum did not mediation effect on the relationship between teacher leadership and students' core competence, and (3) learning did not mediation effect on the relationship between teacher leadership and students' core competence.

**Keywords:** Teachers' Leadership, Student Learning, Curriculum, Student Core Competence, Mediation Effect, Art Colleges/Universities in Chongqing Area

## 1. Introduction

In the context of global educational reform and development, defining the qualities that college students should possess to meet the needs of social development is a key concern for countries and international organizations. A central debate in education revolves around whether the primary focus should be on individual-based or social-based theories. That is, should education prioritize developing individuals to meet societal needs, or should it focus on personal development? Ideally, these two approaches should complement each other. Promoting the formation and perfection of students' physical and mental abilities is essential, not just in terms of acquiring knowledge. (Zhang Na; Xie Zhenan, 2019) Core competence should be the foundational goal of education, as it significantly impacts individuals' holistic development. This is particularly relevant today, as college students face complex social competition, making core competence education vital.

The role of teachers in influencing students' core competence cannot be overstated. Teacher leadership, as American leadership scholar Warren Bennis defines it, is the ability of educators to translate vision into reality. He emphasizes that leadership is a form of influence and that everyone has the potential to be a leader. Therefore, influencing students through teacher leadership becomes a critical aspect of educating individuals and cultivating core competencies. Teachers are central to the interaction between education and students. They are essential in transmitting knowledge, guiding learning, and shaping the core competencies students acquire. Teacher leadership can make a profound impact on students, thus contributing to their holistic development. Curriculum as the Compass for Educational Development. The curriculum plays a pivotal role in shaping students' core competence. It is the blueprint for what teachers, administrators, and students are expected to accomplish. In essence, the curriculum is the compass that guides educational institutions.

In recent years, different models of core competency education have been developed worldwide, aligning curriculum with core competence. The curriculum should reflect the demands of a changing society and emphasize the cultivation of students' abilities. A well-designed curriculum can directly influence teaching and learning processes, ultimately impacting students' core competence. The marriage of education and productive labor is a fundamental principle of socialist education. Labor is central to human development, and combining education with productive labor is essential for all-around human growth. (Qian Jin,

2005) Xi Jinping, the General Secretary, emphasized the importance of linking education with productive labor to produce well-rounded individuals. This concept aligns with historical materialism, which highlights the role of labor in shaping both human development and the world's history.

As societies evolve, the complexity of labor skills and market relations increases. Knowledge transfer, often accomplished through education and practice, is crucial to the development of individuals and society. Core competence, emphasizing knowledge, skills, attitudes, emotions, and values, is essential for students and their lifelong development. Core competence should not be viewed as a single quality but as a combination of various attributes. It applies to all students, representing both personal and social values. Core competence is not static; it evolves over time and through different stages.

The world has witnessed the development of core competency frameworks to address the challenges of the information age. Organizations like the Organization for Economic Co-operation and Development (OECD) and the European Union have established core literacy frameworks, emphasizing collaboration, communication, critical thinking, and creativity (the "4C's"). These are advanced capabilities necessary for solving complex problems and adapting to unpredictable situations. In China, the "Overall Framework for the Development of Core Competencies of Chinese Students" provides a local adaptation of international frameworks. It has significantly influenced China's basic education reform, aligning educational policies with the development of students' core competencies.

The impact of teacher leadership on students' core competence is a crucial aspect of educational research. (Jiang Haiyang; Zhang Guobin, 2021) Teacher leadership encompasses influencing colleagues, principals, and the school community to enhance teaching and learning practices, ultimately improving students' learning and achievements. In the context of teacher leadership, many aspects such as curriculum design, teaching strategies, curriculum reform, and training strategies have a significant influence on students' core competence. Therefore, it's essential to study the intermediary variables of curriculum and learning separately to gauge the influence of teacher leadership more accurately. In art universities, cultivating teaching vision is vital for educators. It requires a deep understanding of the major, accurate grasp of teaching content, and a macro view of personnel training. As art education is practical and ever-evolving, teaching vision should be established based on an understanding of the dynamic nature of teaching and learning. Incorporating Art into the Framework. Art education is distinct from theoretical disciplines, emphasizing not only knowledge but also the application of skills. This complexity demands that teachers set

appropriate teaching objectives, stimulate students' motivation to learn, and help them set and achieve their goals.

Future Research and Implications. The study conducted in Chongqing art colleges and universities aims to examine the influence of teacher leadership on students' core competence. Empirical research, through a quantitative survey of students, will help gauge this influence, providing insight into how teachers can enhance leadership to improve students' core competence. By developing the teacher's leadership level, students' core competence can be significantly enhanced, ensuring the lasting development of art majors in Chongqing's colleges and universities. In conclusion, teacher leadership has a profound impact on students' core competence. In the ever-changing landscape of education, teachers play a pivotal role in shaping the abilities of the next generation. Research on the relationship between teacher leadership and students' core competence is of great practical significance, guiding the cultivation of core competencies and the development of teachers' leadership. This research can lead to more efficient teaching and contribute to the enhancement of students' core competence.

**2. Research objectives**

1. To study the effect of teachers' leadership on the curriculum, learning, students' core competence in Chongqing area.

2. To study the effect of the curriculum and learning on the students' core competence in Chongqing area.

3. To study the mediation effect of curriculum and learning between teachers' leadership and students' core competence in Chongqing area.

**3. Research Hypothesis**

H1: Teacher leadership has positive effect on Students' core competence. (Zhang Ping & Li Xiaohua, 2018)

H2: Teacher leadership has positive effect on Curriculum. (Wang Junxia, 2018)

H3: Teacher leadership has positive effect on Learning. (Zhang Wang, 2020)

H4: Curriculum has positive effect on Students' core competence. (Deng LI, 2018)

H5: Learning has positive effect on Students' core competence. (Lu Di, Xiao Shirong, 2020)

H6: Curriculum has positive effect on Learning. (Dai Rongbiao, 2020)

H7: Teacher leadership has positive effect on students' core competence via curriculum.

H8: Teacher leadership has positive effect on students' core competence via learning.

H9: Teacher leadership has positive effect on students' core competence via learning and curriculum.

## 4. Scope of research content

1. Scope of population in this study were Art students in Chongqing universities who were graduate in academic year 2023 in 17 colleges total students of 6,568. These students were about to finish their college education.

2. Scope of content to study about the mediation effects of the relationship between teacher leadership and students' core competence, including teacher curriculum and students' learning. Teachers' leadership was the independent variable, students' core competence was the dependent variable, and curriculum and learning were the intermediary variables.

a. Teacher leadership:(1) Teachers' ability to grasp teaching objectives. (2) Teachers' personality charm. (3) Interact with students and stimulate enthusiasm. (4) Teachers' ability to challenge and innovate.

b. Students' core competence:(1) Learning ability (2) Cooperation ability (3) Creativity (4) Life and Career Ability (5) Take responsibility.

c. Curriculum: (1) Curriculum design: (2) Learning resources: (3) Curriculum evaluation:

d. Learning:(1) Active Learning (2) Constructive learning (3) Diagnostic Learning and Reflective Learning

## 5. Conceptual Framework

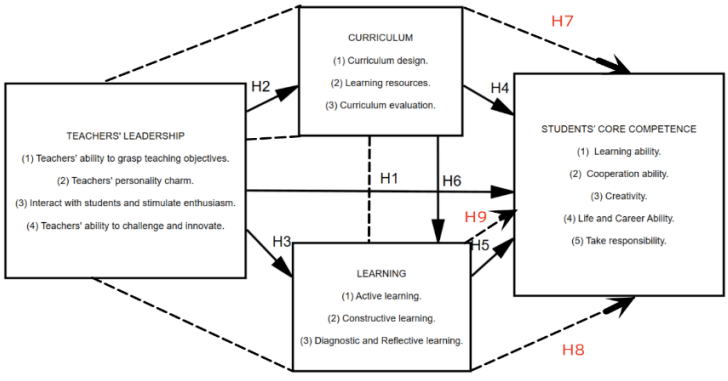


**Figure 1** Conceptual framework of this research

## 6. Research Methodology

### 1. Population and sampling

The population in this study were Art students in Chongqing universities who were graduate in academic year 2023 in 17 colleges total students of 6,568. These students were about to finish their college education. The multi-stage random sampling was used for samples selection. The colleges and universities were unit of sampling at stage 1 which been random selected by 10 colleges and universities. In stage 2 the sampling unit, been Art students and the cluster size was calculated by using the Optimal Design (OD), the sufficient cluster size were 27 students, so researcher had more than 270 samples, Finally, the selected sample is 277.

### 2. Research Instrument

The researcher development Instruments as follow:

(1) Research literature

(2) Build and develop the operational definitions of the project.

(3) The researcher used a five-point rating scale questionnaire.

(4) Experts judge the validity of the content. The IOC's qualified value was 0.6-1.0, with a total of 150 questions, and the result after IOC was 82 questions.

(5) Try out: Modify the developed project according to the results of IOC review. A sample population of not less than 30 non-sample was invited to try and further confirm the feasibility of the designed project. (Reliability and Validity) The Cronbach's alpha was 0.993.

(6) Use software to evaluate the reliability of instruments. Data analysis through SPSS statistics, M-plus and G-power.

### 3. Data collection procedure

Data were collected by respondents through questionnaires. Respondents have two weeks to fill out the questionnaire and return. However, to ensure the expected response rate, a reminder was issued a week later. A total of 277 data were collected, the completion of data collection was 100%.

### 4. Data Analysis

Data analysis is a crucial step in the research process that involves transforming raw data into meaningful insights, patterns, and conclusions. It aims to extract relevant information from collected data to answer research questions, test hypotheses, and draw valid conclusions. The data analysis process varies depending on the type of data (quantitative or qualitative), the research objectives, and the chosen research methodology.

The overall population for this study total students of 6,568. The sample size was determined utilizing Optimal Design (OD) , culminating in a total of 277 samples. Subsequent data collection transpired, with the collected data undergoing analysis via SPSS software.

To accomplish the goals of this research, diverse statistical methods were employed. For instance, descriptive statistics, mean values, and standard deviations were utilized to scrutinize each factor. The potential multi-collinearity among predictors was assessed through factor correlation. The correlation coefficient was deployed to ascertain the direction and magnitude of students' decision-making factors. Logistic regression analysis was employed to explore the comparative impact of predictor variables on students' core competence.

**7. Results**

In measurement models specification in this study, the researcher identified 4 factors and 15 observation variables: (T) Refer to Teacher Leadership. (S) Refer to Student Core Competency. (C) Refer to Curriculum. (L) Refer to Learning.

(1) TAA Teachers' ability to grasp teaching objectives.
(2) TBB Teachers' personality charm.
(3) TCC Interact with students and stimulate enthusiasm.
(4) TDD Teachers' ability to challenge and innovate.
(5) SAA Learning ability
(6) SBB Cooperation ability
(7) SCC Creativity
(8) SDD Life and Career Ability
(9) SEE Take responsibility.
(10) CAA Curriculum design
(11) CBB Learning resources.
(12) CCC Curriculum evaluation
(13) LAA Active Learning
(14) LBB Constructive learning
(15) LCC Diagnostic Learning and Reflective Learning

Demographic Information

It was summarized that there were 147 male students, accounting for 53.1% of the sample size, there were 130 female students, accounting for 46.9% of the total. The Working experience levels of the samples were: 76 people used to have working experience (27.4%),

201 people have no working experience (72.6%). The age levels of the samples were: 9 people less than 23 years old (3.2%), 145 people were 23 years old (52.3%), 103 people were 24 years old (37.2%), 20 people more than 24 years old (7.2%), so the largest samples group was 23 years old and 24 years old. The Major of the samples was: 111 people were Fine Art Major (40.1%), 89 people were Design Major (32.1%), 32 people were Music Major (11.6%), 36 people were Drama Major (13%), 9 people were Other Major (3.2%). In terms of university, 88 students were from Sichuan Fine Arts Institute(34.8%), 28 students were from Chongqing University (10.1%), 41 students were from Southwest University (14.8%), 8 students were from Chongqing Institute of Science and Technology (2.9%), 27 students were from Chongqing Normal University (9.7%), 5 students were from Changjiang Normal University (1.8%),18 students were from Chongqing University of Arts and Sciences (6.5%),11 students were from Chongqing Three Gorges College (4.0%),47 students were from Foreign Business College of Chongqing Normal University (17%),4 students were from Chongqing Jiao tong University (1.4%)

**Table 1** Descriptive statistics and Multivariate normality test

| **Variables** | **`X** | **S.D.** | **%CV** | **SK** | **KU** | **Level** |
|---|---|---|---|---|---|---|
| TAA | 4.26 | 0.675 | 15.85% | -1.182 | 0.825 | Highest |
| TBB | 4.25 | 0.673 | 15.84% | -1.315 | 1.234 | Highest |
| TCC | 4.30 | 0.614 | 14.28% | -1.365 | 1.421 | Highest |
| TDD | 4.26 | 0.687 | 16.13% | -1.380 | 1.263 | Highest |
| SAA | 4.24 | 0.716 | 16.89% | -1.245 | 1.026 | Highest |
| SBB | 4.05 | 0.783 | 19.33% | -1.138 | 1.003 | High |
| SCC | 4.08 | 0.799 | 19.58% | -0.972 | 0.224 | High |
| SDD | 4.14 | 0.755 | 18.24% | -1.123 | 0.723 | High |
| SEE | 4.20 | 0.679 | 16.17% | -1.015 | 0.482 | Highest |
| CAA | 4.21 | 0.627 | 14.89% | -0.986 | 0.534 | Highest |
| CBB | 4.20 | 0.680 | 16.19% | -1.098 | 0.918 | High |
| CCC | 4.25 | 0.648 | 15.25% | -1.253 | 1.191 | Highest |
| LAA | 4.00 | 0.775 | 19.53% | -0.894 | 0.469 | High |
| LBB | 4.04 | 0.800 | 19.80% | -0.982 | 0.361 | High |
| LCC | 3.95 | 0.838 | 21.26% | -0.959 | 0.168 | High |
| Mardia's coefficient | T S C L (Multivariate normality) | | | 39.24 | 292.63 | |

Multivariate data normality was assessed with Mardia's coefficient for TSCL, yielding values of 39.24 (SK) and 292.63 (KU). To determine univariate normality, skewness values within the range of -2 to +2 and kurtosis values between -10 and +10 were considered acceptable (Collier, 2020, p. 166). The calculated mean values for questionnaire items ranged notably from 3.95 to 4.30, with LCC having the lowest and TCC the highest averages, close to the maximum score of 5. This indicates that the questionnaire represented high-quality characteristics aligning with the research objectives and offering valuable reference data. Standard deviation, affected by variations in observation values, ranged from 0.614 to 0.838 for each observation variable, reflecting data deviation from the mean. Means, standard deviations, and coefficient of variation percentages ranged between 14.28% and 21.26%, indicating questionnaire data exhibited a normal distribution. In terms of univariate normality, skewness, reflecting data distribution asymmetry, ranged between -0.894 and -1.253, well within the acceptable range of -2 to 2. Furthermore, kurtosis, signifying the distribution curve's peak, ranged from 0.168 to 1.421, indicating an acceptable, relatively flat distribution (Collier, 2020, p. 166).

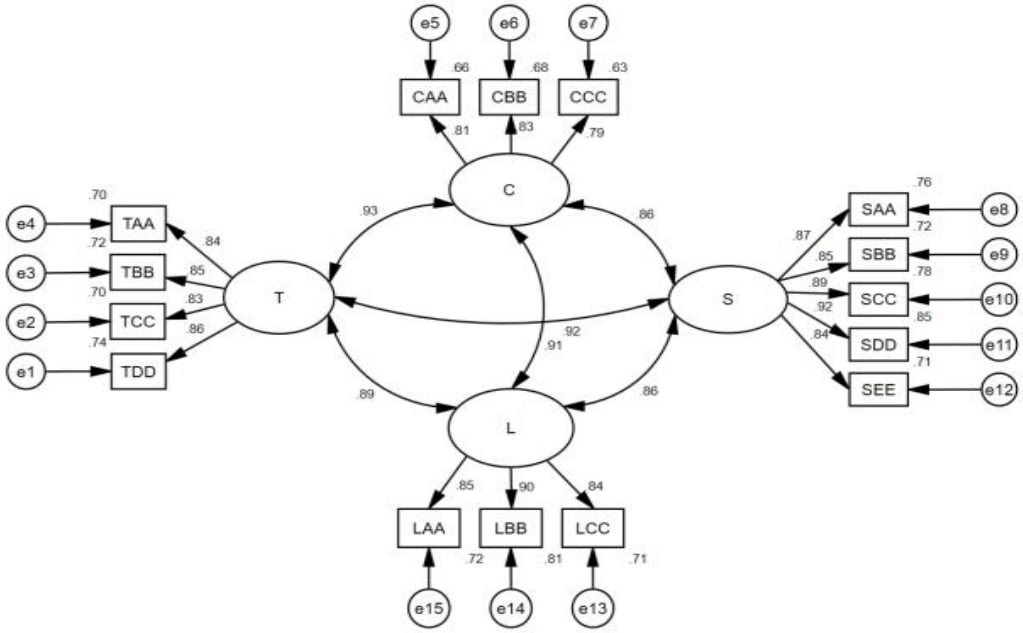


**Figure 2** CFA model of mediating effect (standardized model)

The mediating model of this research was established by using the structural equation modeling tool Mplus. Through this model, Chi-Square=171.642, df=84, Chi/df=2.043, p.=0.000, RMSEA=0.061, CFI=0.978, TLI=0.972, SRMR=0.012, these indicators shown that the measurement model fit good the empirical data, so we can assume that the model was

correct.

**Table 2** Measurement model fit valuation after modifying.

| Measure | Estimate | Threshold | Interpretation |
|---|---|---|---|
| CMIN | 171.642 | -- | -- |
| DF | 84 | -- | -- |
| CMIN/DF | 2.043 | Between 1 and 3 | Excellent |
| CFI | 0.978 | >0.95 | Excellent |
| RMSEA | 0.012 | <0.06 | Excellent |

**Table 2** shows that the model fit and factor loading data excellent.

**Table 3** Factor loading of Four Latent Variables in Unstandardized and Standardized

| | | | | **95% Confidence Intervals** | | | | |
|---|---|---|---|---|---|---|---|---|
| **Latent** | **Observed** | **Estimate** | **SE** | **Lower** | **Upper** | **β** | **z** | **p** |
| T | TDD | 1.000 | 0.0000 | 1.000 | 1.000 | 0.861 | | |
| | TCC | 0.866 | 0.0479 | 0.773 | 0.960 | 0.835 | 18.1 | < .001 |
| | TBB | 0.967 | 0.0517 | 0.866 | 1.069 | 0.850 | 18.7 | < .001 |
| | TAA | 0.958 | 0.0524 | 0.856 | 1.061 | 0.840 | 18.3 | < .001 |
| S | SEE | 1.000 | 0.0000 | 1.000 | 1.000 | 0.841 | | |
| | SDD | 1.219 | 0.0583 | 1.105 | 1.334 | 0.921 | 20.9 | < .001 |
| | SCC | 1.241 | 0.0638 | 1.116 | 1.366 | 0.886 | 19.5 | < .001 |
| | SBB | 1.161 | 0.0647 | 1.034 | 1.288 | 0.846 | 18.0 | < .001 |
| | SAA | 1.096 | 0.0578 | 0.982 | 1.209 | 0.873 | 19.0 | < .001 |
| C | CAA | 1.000 | 0.0000 | 1.000 | 1.000 | 0.813 | | |
| | CBB | 1.102 | 0.0697 | 0.966 | 1.239 | 0.826 | 15.8 | < .001 |
| | CCC | 1.007 | 0.0676 | 0.875 | 1.140 | 0.792 | 14.9 | < .001 |
| L | LAA | 1.000 | 0.0000 | 1.000 | 1.000 | 0.849 | | |
| | LBB | 1.094 | 0.0555 | 0.985 | 1.203 | 0.900 | 19.7 | < .001 |
| | LCC | 1.073 | 0.0608 | 0.954 | 1.192 | 0.843 | 17.7 | < .001 |

The analysis results in **Table 3** show the unstandardized and standardized factor loading of the 15 observed variables on the 4 factors. The results in Table 4.5 show that the load of each observed variables was statistically significant, and the standardized value was greater than 0.70, indicating that each observed variable is a good indicator to measure each factor. The indicator TDD has a better effect on T (0.861) ; The indicator SDD has a better effect on S (0.921) ; The indicator CBB has a better effect on C (0.826) ; The indicator LBB has a better effect on L (0.900) ;

**Table 4** The Square Matrix of Intercorrelation Between Latent Variables

| | L | S | C | T |
|---|---|---|---|---|
| L | 1.000 | | | |
| S | .865 | 1.000 | | |
| C | .906 | .861 | 1.000 | |
| T | .888 | .923 | .931 | 1.000 |

The correlation matrix analysis results of variables in **Table 4** show that the correlation coefficients between Variables L and S, L and C, L and T, S and C, S and T, C and T were 0.865-0.923, indicating that there was a high correlation between variables (Patrick Schober,el al., 2018, pp. 1763-1768)

**Table 5** The Composite Reliability (**α** and CR), The Average Variance Extracted (AVE).

| Latent Variable | No. | **α** | CR | AVE |
|---|---|---|---|---|
| T | 4 | 0.91 | 0.910 | 0.717 |
| C | 3 | 0.85 | 0.852 | 0.657 |
| S | 5 | 0.94 | 0.942 | 0.764 |
| L | 3 | 0.90 | 0.899 | 0.747 |

**Reliability (α and CR)**

In this model, composite reliability was used to evaluate the reliability of the measurement model, and the cut-off criterion was 0.70 (Hair, et. al, 2017). The data analysis in Table 4.8 shows that the **α** values were 0.91, 0.85, 0.94 and 0.90, the CR values were 0.910, 0.852, 0.942 and 0.899 respectively, indicating that the reliability of the measurement model was very high.

**Convergent validity**

Reliability (α) coefficient Cronbach's Alpha and Average Variance Extracted, which determine the degree of convergence between variables and their component indicators, were referred to as convergent validity (AVE). The coefficient Cronbach's Alpha (α) values of variables T, C, L, and S were 0.91, 0.85, 0.94 and 0.90; The CR values of variables T, C, L, and S were 0.910, 0.852, 0.942 and 0.899, respectively, as shown in the above table, and they were all higher than 0.7. (Collier, 2020, p. 87). The model variables exhibited strong internal convergent validity, as evidenced by the fact that the AVE values of variables T, C, L, and S were 0.717, 0.657, 0.764 and 0.747, respectively, and were all greater than 0.5. (Collier, 2020, p. 83).

**Hypothesis testing**

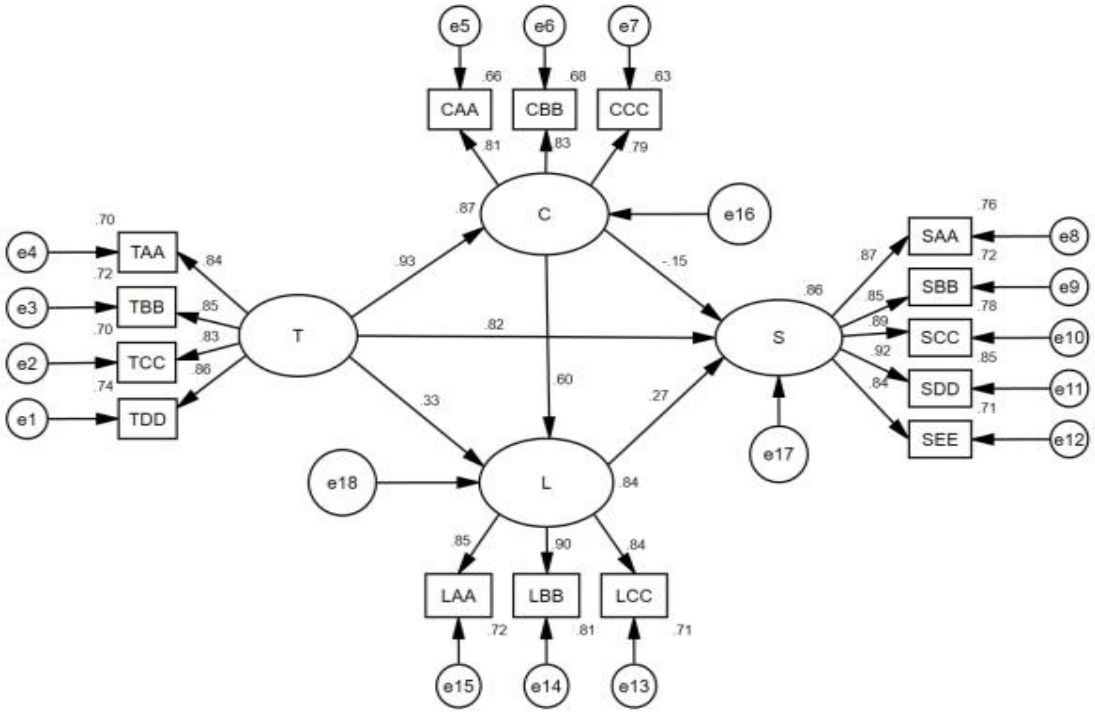


**Figure 3** SEM of mediating effect (standardized)

The researcher tested the fit of the structural model and found that the fit of the structural model was as follows: (Chi-Square=171.642, df=84, Chi/df=2.043, p.=0.000, RMSEA=0.061, CFI=0.978, TLI=0.972, SRMR=0.012) The fit of the structural model was acceptable.

**Table 6** The Hypotheses Testing

| Direct effects | unstandardized | standardized | S.E. | C.R | P-value | Hypotheses |
|---|---|---|---|---|---|---|
| T⟶S | .906 | .821 | .167 | 5.134 | *** | H1 |
| T⟶C | .837 | .931 | .056 | 14.869 | *** | H2 |
| T⟶L | .383 | .330 | .202 | 1.901 | .057 | H3 |
| C⟶S | -0.181 | -.145 | .226 | -.790 | .429 | H4 |
| L⟶S | .254 | .268 | .110 | 2.322 | ** | H5 |
| C⟶L | .774 | .599 | .230 | 3.362 | *** | H6 |

Significance Indicators: **p<0.050, ***p<0.010, (Gaskin& Lim, 2018)

According to the analysis results in Table 4.9, the significance results (P value) of the direct hypothesis of HI/H2/H6 in this study were all less than 0.05, indicating that the five direct hypotheses in this study were all valid. The normalized path coefficients of HI/H2/H6 were set to be 0.821,0.931,0.599, respectively. The P values all were ***(P<0.010). It shows that T has significant direct impact on S, T has significant direct impact on C, C has significant direct impact on L.

**Table 7** The effect decomposition in the indirect effects

| **Label** | **Description** | **Estimate** | **SE** | **Lower** | **Upper** | **β** | **z** | **p** |
|---|---|---|---|---|---|---|---|---|
| H9(H2+H6+H5) | T ⇒ C ⇒ L ⇒ S | 0.165 | 0.097 | -0.025 | 0.354 | 0.149 | 1.701 | 0.089 |
| H7(H2+H4) | T ⇒ C ⇒ S | -0.149 | 0.188 | -0.518 | 0.220 | -0.135 | -0.793 | 0.428 |
| H8(H3+H5) | T ⇒ L ⇒ S | 0.097 | 0.054 | -0.008 | 0.203 | 0.088 | 1.806 | 0.071 |
| H6+H5 | C ⇒ L ⇒ S | 0.197 | 0.115 | -0.030 | 0.423 | 0.160 | 1.704 | 0.088 |

The indirect effect of T on S through C was -0.149 with 95% confidence interval [-0.518,0.220] excluding 0. This indicates that T has no indirect effect on S through C.

The indirect effect of T on S through L was 0.097, with 95% confidence interval [-0.088,0.203] excluding 0. This indicates that T has no indirect effect on S through L.

The indirect effect of C on S through L was 0.197, with 95% confidence interval [-0.030,0.423] excluding 0. This indicates that C has no significant mediating effect on S through L.

The indirect effect of T on S through C and L was 0.165, with 95% confidence interval [-0.025,0.354] excluding 0. This indicates that T has no significant mediating effect on S through C and L.

**Table 8** Decomposition effect of variable T C L on S.

| Variable | Direct Effect | Indirect Effect | Total Effect | Correlation | Spurious |
|---|---|---|---|---|---|
| T | 0.906 | 0.102 | 1.008 | 0.923 | -0.085 |
| C | -0.145 | 0.174 | 0.029 | 0.861 | 0.832 |
| L | 0.268 | - | 0.268 | 0.865 | 0.597 |

According to According to the analysis results in Table 4.11, it was found that T, C and L has spurious effect, T was-0.085, C was 0.832, L was 0.597, respectively.

## 8. Conclusion

Through data analysis, we can also see that Teacher Leadership has no significant positive effect on Learning. Curriculum has no significant positive effect on Students' Core Competence. And Learning has no significant positive effect on Students' Core Competence.

Through data analysis, we can see that Curriculum and Learning have no significant mediation effects between Teachers' Leadership and Students' Core Competence. However, through effect decomposition, we can see that Curriculum and Learning has an unknown spurious effect on Students' Core Competence.

## 9. Discussion

(1) In line with the research objective of exploring the impact of teacher leadership on curriculum, learning, and students' core competence, the study revealed that teacher

leadership significantly influences the curriculum and students' core competence, yet it does not have a significant impact on learning. Teacher leadership was identified as a foundational element for building core competence, emphasizing its importance in guiding curriculum reform and enhancing teacher professional growth. The results align with previous research highlighting the role of teacher leadership in promoting student learning (Zhang Ping,

Li Xiaohua, 2018; Roger Goddard, Yvonne Goddard, Eun Sook Kim, Robert, 2015; Ronald H. Heck, Philip Hallinger, 2014).

(2) Regarding the research objective of investigating the influence of curriculum and learning on students' core competence, the findings indicate that learning and curriculum do not significantly affect students' core competence. Teacher leadership, curriculum, and students' learning are interconnected, with teacher leadership influencing core competence through curriculum design. Deepening curriculum reform and cultivating core literacy require a thorough understanding of teachers' curriculum leadership. Scholars emphasize the interplay between educational theory, curriculum leadership, professional knowledge, and real-time teaching and learning monitoring (Sang Lei, 2020; Xu Fenghua, Chen Junyuan, 2021; A. Barbu, O.C. Dochia, G. Militaru, D.C. Deselnicu, 2023; Allan A. Glatthorn, Floyd Boschee, Bruce M. Whitehea, 2018).

(3) In pursuit of the research objective examining the mediating role of curriculum and learning in the relationship between teacher leadership and students' core competence, the study found that curriculum significantly impacts learning, but learning does not significantly affect students' core competence. Notably, curriculum and learning do not mediate the connection between teacher leadership and students' core competence. However, the analysis indicates the presence of unknown spurious factors contributing to this relationship. Further exploration is warranted to identify these factors (Zhang Wang, 2020).

## 10. Recommendations

**Recommendations for Policy Formulation:** The study underscores the crucial role of teacher leadership in shaping students' core competencies, prompting policy recommendations for policymakers. To enhance teacher leadership and foster students' core competencies, the following steps were advised:

**(1) Training and Developing Teacher Leadership:** Government and school management authorities should offer regular teacher leadership training to enhance educators' leadership skills, including educational leadership, teamwork, communication, problem-solving, and decision-making. Encouraging teachers to engage in professional development activities such as seminars and research projects is vital for continual leadership improvement.

**(2) Recruitment and Selection:** During teacher recruitment, emphasize personality traits and communication skills. Implement a rigorous selection process to ensure the hiring of teachers with a positive influence and strong interpersonal relationships.

**(3) Establish a Mentor Program:** Create mentorship programs that pair experienced teachers with novice teachers, allowing the transfer of leadership skills and educational experience to newcomers.

**(4) Incentive Policies:** Governments can introduce incentive policies to attract and retain high-quality teachers, including competitive compensation, career development opportunities, and other benefits that motivate teachers to continuously enhance their leadership and educational capabilities. These policy recommendations contribute to the improvement of teacher leadership, thereby benefiting the development of students' core competencies.

**Recommendations for Practical Application:** To practically apply the concept of teacher leadership, several key areas are addressed:

**(1) Mastery of Teaching Objectives:** Ensure clear teaching objectives are established, aligning with curriculum requirements and student proficiency levels. Effective communication of these objectives to students, alongside personalized learning, aids in reaching individual learning goals.

**(2) Building Positive Relationships:** Cultivate a positive, respectful, and supportive classroom environment, encouraging open communication, respecting student views, and stimulating their curiosity.

**(3) Interactive Teaching:** Promote classroom interaction through questioning, group discussions, and problem-solving activities, fostering student participation and self-confidence.

**(4) Challenging and Innovative Teaching:** Encourage the use of educational technology, interdisciplinary education, practical projects, and case studies to enhance teaching innovation.

**(5) Continuous Assessment and Improvement:** Regular feedback and assessment of the curriculum and student evaluations contribute to continuous improvement. By implementing these suggestions in the classroom, teachers can better inspire students and cultivate their core competencies.

**Recommendations for Further Research:** This study acknowledges its limitations and proposes areas for future research:

**(1) Sample Size and Representativeness:** Future studies should consider expanding sample sizes and evaluating the representativeness of samples to enhance the validity of findings.

**(2) Changing Social Values:** The study suggests considering the evolving nature of social values and cultural concepts, which may affect the relevance and importance of research questions over time.

**(3) Intermediate Role of Curriculum and Learning:** Due to limited research in the field, future studies should delve deeper into understanding the intermediate role of curriculum and learning in the relationship between teacher leadership and student core competencies. Further investigation can explore demographic and organizational differences to better comprehend this complex relationship.

By addressing these aspects, future research can refine our understanding and inform practical strategies for improving students' core competencies through teacher leadership.

## BIbliography

A. Barbu,O.C. Dochia,G. Militaru,D.C. Deselnicu. (2023). **LEADERSHIP IN EDUCATION: A CASE STUDY OF SUCCESSFUL TEAM LEARNING ACTIVITIES.** Conference name: 15th International Conference on Education and New Learning Technologies.

Allan A. Glatthorn, Floyd Boschee, Bruce M. Whitehea. (2018). **Curriculum Leadership: Strategies for Development and Implementation.** Printed in the United States of America.

Deng Li. (2018). **Research on American Skills Education Reform in the 21st Century.** Doctoral thesis of East China Normal University.

Dai Rongbiao. (2020). **The Growth Ways of Senior High School Teachers' Curriculum Leadership under Core Literacy.** Symposium on Teacher Education Capacity Building in 2020, p.315-316.

Jiang Haiyang; Zhang Guobin. (2021). **The Construction of Young and Middle-aged Teachers in Colleges**. MEITAN HIGHER EDUCATION, p. 82-87.

Lu Di, Xiao Shirong. (2020). **Research on the Development of Teachers' Curriculum Leadership under the Background of 5C Core Literacy.** Journal of Jinzhou Medical University (Social Science Edition), p.86-90.

Qian Jin. (2005). **On the Ulitiy of Labour.** Social Sciences Academic Press.

Roger Goddard, Yvonne Goddard, Eun Sook Kim, Robert. (2015). **A Theoretical and Empirical Analysis of the Roles of Instructional Leadership, Teacher Collaboration, and**

**Collective Efficacy Beliefs in Support of Student Learning.** American Journal of Education, p.501-530.

Ronald H. Heck, Philip Hallinger. (2014). **Modeling the longitudinal effects of school leadership on teaching and learning.** Journal of Educational Administration, p.653-681.

Sang Lei. (2020). **Research on Vocational Core Literacy of Higher Vocational Students and Its Cultivation.** Doctoral thesis of Nanjing Normal University.

Wang Junxia. (2018). **Connotation and Promotion Strategies of Teachers' Teaching Leadership under the Background of Core Literacy.** Journal of Hunan University of Humanities, Science and Technology, p.114-117.

Xun Fenghua, Chen Junyuan. (2021). **K-VPI Teachers' Curriculum Leadership from the Perspective of Core Literacy: Model Construction and Connotation Interpretation.** Nanjing social sciences, p.149-158.

Zhang Na**;** Xie Zhenan. (2019). **Review and Prospect of the Research on Core Literacy of College Students in China.** Journal of Chifeng University (Soc.Sci), p.126-130.

Zhang Wang. (2020). **Teaching Reform Oriented by Core Literacy Goal and Principal's Teaching Leadership.** Journal Of Educational Institute of Jilin Province, 1-8.

Zhang Ping & Li Xiaohua. (2018). **On the Return and Promotion of Teachers' Curriculum Leadership from the Perspective of Core Literacy.** Contemporary Teacher Education, p.55-62.

Zhang Wang. (2020). **Teaching Reform Oriented by Core Literacy Goal and Principal's Teaching Leadership.** Journal Of Educational Institute of Jilin Province, p. 1-8.