

The Influences of Transformational Leadership on the Quality Management and Evaluation of Distance Education in Higher Educational Institutions: A Case of Art Majors in Liaoning Province

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Abstract:

The purpose of this study were to: (1) Identify the influences of transformational leadership on the quality management and evaluation (QME) of distance education in higher educational institutions in Liaoning province; (2) Decompose such influences by taking into account organizational climate and teachers' self-efficacy; and (3) Test the model fit with empirical data. A total of 270 art teachers from 20 public colleges and universities in Liaoning Province were included in this study, by using self-rating questionnaire, with the IOC values ranging from 0.6 to 1.0 and Cronbach's Alpha coefficient of reliability of 0.997. Descriptive statistics, path analysis and structural equation modeling (SEM) were used, to analyze the data collected with the application of computer programs, SPSS (v.26) and AMOS (v.24). The results showed that: (1) The transformational leadership significantly influenced the quality management and evaluation of distance education in art majors in higher educational institutions, Liaoning Province (Chi-square = 260.322; df = 98; p-value = 0.000; CFI = 0.978; TLI = 0.973; RMSEA = 0.078); (2) The transformational leadership exerted its influences on the quality management and evaluation of distance education both directly and indirectly through organizational climate and teachers' self-efficacy; and (3) The model fitted well with empirical data (Chi-square = 71.150; df = 47; p-value = 0.013; ratio = 1.514; CFI = 0.990; RMSEA = 0.050).

Keywords:

Transformational Leadership, Quality Management and Evaluation, Distance Education, Organizational Climate, Teachers' Self-Efficacy

1. Introduction

Under the fast-changing environment and disruption, colleges and universities must adapt their teaching and learning strategies to suit the times. Liaoning Provincial government has endorsed remote or distance learning as a key initiative for educational growth, aiming to guarantee basic personal development, societal advancement, and increase global competitiveness. Many higher education scholars and educators have focused on instructors' teaching competence and professional security as ways to address the issue of social responsibility for the challenges of distance learning quality of art majors in colleges and universities. As a result, network education has been rapidly expanding in Liaoning Province's higher educational institutions. A phase of transformation and upgrading was also ushered in by this growth, and issues such as how to balance the relationship between online education and educational quality, profit-standardized management and quality improvement, online degree education quality assurance, and the advancement of universities themselves also emerged. Many academics view distance learning will play an everlasting part in the future of education since it is comparatively more efficient in exporting skills through online education. However, to actually be certain about the creditability of online education management, establishing a trustworthy assessment process and monitoring is essential, at least, to gather more conclusive information and supportive evidence.

To this end, higher education is not any longer an option. Distance education, then, should be one of the promising strategies for higher education in increasing the proportion of the population with higher education. How to open and manage distance education to target a bigger audience and deliver more effective educational services for more objects has emerged as a key research area in both theory and practice. The following point were set for this study:

First, open distance learning has diverse functions. Moving into the 21st century and the era of the knowledge economy, the goals of lifelong education are being increasingly fulfilled by various forms of online learning. The aims of educational reforms in many countries today has focused on the creation of a learning society and a system of lifelong education. However, there are still issues with how distance learning system is operated. Modern remote education is relatively novel in China. Both theoretical and practical foundations are currently being researched and developed.

Second, in terms of management of distance education, the findings of this study, which particularly focuses on the Chinese contexts in distance education, may provide proper information and suggestions for the management of remote art education in colleges and universities in Liaoning Province.

Third, knowledge gap exists between China and advanced nations in regards to distance education. It is critical for scholars in this discipline to continue to accumulate more theoretical knowledge of this field, especially with the Chinese backgrounds. The results of this research, to the least extent, may contribute to the advancement of the theory of remote education in China, and, eventually, share some thought for further international comparison.

2. Materials and Methods

2.1. Research Questions

The following questions were set to guide this study:

- 1) Was there any causal effects between transformational leadership and quality management and evaluation (QME) of distance education in higher educational institutions in Liaoning Province?
- 2) When taking into account organizational climate and teachers' self-efficacy, how did transformational leadership influence quality management and evaluation (QME)?
- 3) Did the model developed fit with empirical data?

2.2. Research Objectives

The objectives of this study were:

- 1) To identify the influences of administrators' transformational leadership on the quality management and evaluation (QME) of distance education in higher educational institutions in Liaoning Province.
- 2) To decompose the influences identified, by taking into account organizational climate and teachers' self-efficacy.
- 3) To test the model fit with empirical data

2.3. Research Method

1) Population and Samples

In 2022, there were 40 public colleges and universities offering art education, 20 of which were randomly selected to be used as sampling clusters. The samples for this study were further chosen using a multi-state random sampling approach. A total of 270 art teachers working in those selected 20 institutions were proportionally drawn to be used as samples for the study

2) Instruments

Based on related theories and conceptual framework, the researcher developed a self-rating Likert-type questionnaire, composed of six parts, demographic information, transformational leadership, organizational climate, teachers' self-efficacy, and quality management and evaluation (QME). Five experts were invited to evaluate the content validity, and the item-objective consistency (IOC) ranged from 0.6 to 1.0. The questionnaires with 69 items were tried out and the Cronbach's coefficient of reliability was 0.997. The researcher delivered duplicated questionnaires to chosen samples by internet, mail, and self-collection, with the returning rate of 100%

3) Data Analysis

The researcher used both descriptive statistics, path analysis, and structural equation modeling to analyze the data obtained by computers programs SPSS (v26) and AMOS (v24).

3. Results and Discussion

3.1. Sample characteristics

According to Table 1, the respondents were slightly more male (58.15%) than female (41.85%). Slightly more than one-third (37.41%) were in the age range of 31-40 years old, followed by another one-third (32.22%) were in the 41-50 age group. The remaining were either below 31, or above 50 years old. The majority (200

teachers or 74.07%) of teachers were holding Master's degrees and the remaining are holding doctoral degrees. Slightly more than half (54.44%) were lecturers, followed by associate professors (28.89%), professors (8.52%), and assistant professors (8.15%) respectively. Regarding the respondents' self-perception of their respective majors' unique qualities, almost half (127 teachers or 47.04%) could not claim what levels of qualities their major fall into. Almost one-fourth (24.44%) perceived that their majors were at the provincial first-class level, while less than two percent claimed at the China's top qualities, and about 9% viewed their majors were in national first-class. Additionally, the majority (158 teachers or 58.52%) were working in design science, followed by arts (20.0%) and music and dance majors (15.93%), while the remaining scattered over other majors, such as, radio, films, dram, and television.

3.2. *Quality of the measurement model*

The researcher used Maximum Reliability, MaxR(H) and Maximum Shared Variance, MSV to determine the validity and dependability of the measurement model. In principle, each variable's MaxR(H) value ought to be higher than its Composite reliability (CR) value, and its MSV value ought to be lower than its Average Variance Extracted (AVE) value. In Table 2, the MaxR(H) values for variables F1, F2, F3, and F4 were 1, 0.967, 0.976, and 0.968, respectively. It was observed that each variable's MaxR(H) value was higher than or equal to its CR value. Variables F1, F2, F3, and F4 had MSV values of 0.260, 0.221, 0.261, and 0.261, respectively, with AVE values of 0.846, 0.859, 0.911, and 0.876. The findings demonstrated that all four variables' MSV values were lower than their AVE values, demonstrating the model's high dependability and validity.

In this model, composite reliability (CR) was used to evaluate the reliability of the measurement model, and the cut-off criterion was .70 (Hair, et. al, 2017). The data analysis in Table 2 also showed that the CR values were 0.955, 0.961, 0.976 and 0.966 respectively, indicating that the reliability of the measurement model was very high. The composite reliability (CR) and average variance extracted (AVE), which determine the degree of convergence between variables and their component indicators, are referred to as convergent validity (AVE). The CR values of variables F1, F2, F3, and F4 were 0.955, 0.961, 0.976, and 0.966, respectively, as shown in Table 2, and they were all higher than 0.700. (Collier, 2020, pp. 87). The model variables exhibited strong internal convergent validity, as evidenced by the AVE values of variables F1, F2, F3, and F4 (0.846, 0.859, 0.911, and 0.876) and were all greater than 0.500. (Collier, 2020, pp. 83). [1,2]

Further, different method was used to evaluate discriminant validity. In principle, the AVE value of each prospective construct should be higher than the matching Maximum Shared Variance (MSV) (Adedeji et al., 2017). Table 2 also showed that the AVE of F1, F2, F3, and F4 were 0.846, 0.859, 0.911, and 0.876, which were all more than the matching MSV. [3]

Another method used was the Fornell & Larker criterion (Adedeji et al., 2017, pp. 149-170), using the square root of AVE for each potential structure. Data analysis in Table 2 showed that AVE square root of factors F1, F2, F3 and F4 were 0.920, 0.927, 0.954 and 0.936, respectively, and each value was greater than the correlation between the respective variables. Numbers were: 0.920>0.470>0.403>0.510, 0.927>0.470>0.399>0.415, 0.954>0.403>0.399>0.511, 0.936

6>0.510>0.415>0.511. The analysis results showed that the variables in this study contained good discriminant validity.[3]

Table 1. The Composite Reliability (CR), The Average Variance Extracted (AVE) The Maximum Shared Variance (MSV), The Maximum Reliability (MaxR(H)), and The Latent Variables Intercorrelation with Square Root of AVE at The Diagonal.

Latents	CR	AVE	MSV	MaxR(H)	F1	F2	F3	F4
F1	0.955	0.846	0.26	1	0.92			
F2	0.961	0.859	0.221	0.967	0.470***	0.927		
F3	0.976	0.911	0.261	0.976	0.403***	0.399***	0.954	
F4	0.966	0.876	0.261	0.968	0.510***	0.415***	0.511***	0.936

Note: Significance Indicators: *** $p < 0.001$ (Gaskin & Lim, 2018)[4]

3.3. Hypotheses testing

According to the analysis results in Table 3, the significance results (p-value) of the direct-effect hypothesis, H1-H6, were all less than 0.050, indicating that the six hypotheses were statistically significant. The normalized path coefficients of H1-H6 were 0.128, 0.404, 0.470, 0.186, 0.369 and 0.225, respectively. It indicated that transformational leadership has significant direct influences (p-value = 0.046) on the quality management and evaluation (QME). Transformational leadership also directly influenced both organizational climate (p-value = 0.001) and teachers' self-efficacy (p-value = 0.001). Organizational climate also directly influenced both QME (p-value = 0.003) and teachers' self-efficacy (p-value = 0.001). And finally, teachers' self-efficacy had significant direct influences QME (p-value = 0.0001). Details of related statistics were shown in Table 2 below.

Table 2. Hypotheses Testing (Direct Effects).

Direct effects	unstandar dized	standardiz ed	S.E.	z	P-value	Hypothes es
F3 <--- F1	0.107	0.128	0.053	1.999	0.046	H1
F4 <--- F1	0.383	0.404	0.057	6.760	***	H2
F2 <--- F1	0.448	0.470	0.053	8.493	***	H3
F3 <--- F2	0.162	0.186	0.054	3.013	0.003	H4
F3 <--- F4	0.324	0.369	0.056	5.788	***	H5
F4 <--- F2	0.224	0.225	0.060	3.710	***	H6

Note: Significance Indicators: *** $p < 0.001$ (Gaskin & Lim, 2018)[4]

3.4. Decomposition of influences

The researcher used path analysis to detect how transformational leadership influenced QME, by identifying indirect effects through two selected mediating variables, organizational climate and teachers' self-efficacy. It was found, as shown in Table 3, that transformational leadership indirectly influenced QME via organizational climate (p-value = 0.013) and teachers' self-efficacy (p-value = 0.000). Further, transformational leadership also indirectly influenced QME through organizational climate, and then through teachers' self-efficacy (p-value = 0.001). As hypothesized, transformational leadership indirectly influenced teachers' self-efficacy via organizational climate (p-value = 0.002). And lastly, organizational climate indirectly exerted its impacts on QME via teachers' self-efficacy (p-value = 0.001).

Details of relate statistics, both in unstandardized and standardized, were presented in Table 3.

Table 3. Influence Decomposition (Indirect Effects).

Indirect Path	Unstandardized Estimate	Lower	Upper	P-Value	Standardized Estimate
F1 --> F2 --> F4	0.100	0.051	0.156	0.002	0.106**
F1 --> F2 --> F4 --> F3	0.033	0.015	0.060	0.001	0.106**
F1 --> F2 --> F3	0.073	0.024	0.128	0.013	0.087*
F1 --> F4 --> F3	0.124	0.082	0.181	0.000	0.149***
F2 --> F4 --> F3	0.073	0.037	0.124	0.001	0.083**

NOTE: Significance Indicators: * $p < 0.050$, ** $p < 0.010$, *** $p < 0.001$ (Gaskin & Lim, 2018)[4]

3.5. Structural equation model evaluation

The researcher tested the model fit and found that the structural equation model developed for this study fitted well with empirical data (Chi-square = 71.150, df = 47, p-value = 0.013, ratio = 1.514, CFI = 0.990, RMSEA = 0.057). The structural model was acceptable as details shown in Figure 1.

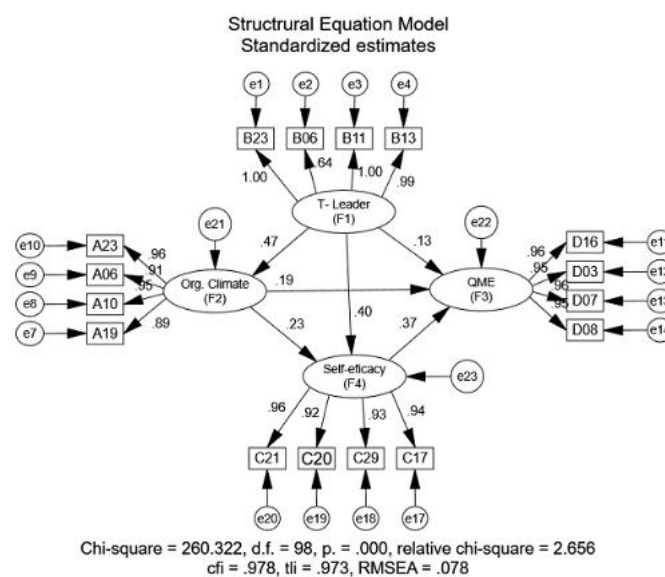


Figure 1. Structural Equation Model and Model Evaluation in Standardized.

4. Conclusions

(1) It was discovered that the transformational leadership of colleges and university leaders in Liaoning Province, as perceived by art teachers, influenced quality management and evaluation of distance education both directly and indirectly. All hypotheses posted for testing the relationships of the variables under study were significant and acceptable.

(2) Based on the extent of impacts shown by statistics, organizational climate and teachers' self-efficacy were two key potential variables on the quality management and evaluation of distance education for art majors at colleges and institutions in Liaoning Province.

(3) Taking into account organizational climate and teachers' self-efficacy, the structural relationship model between the transformational leadership and the quality management and evaluation of distance education for art majors in colleges and universities in Liaoning Province fitted well with empirical data.

Discussion:

(1) Though all hypotheses under this research were statistically accepted, certain path of influences of transformational leadership is still conceptually skeptical. Specifically, the direct causal relationship between transformational leadership and quality management and evaluation (QME) as accepted in hypothesis 1 (path coefficient = 0.107, z-value = 1.999, p-value = 0.046) as shown in Table 3, such impact was comparatively too small. Practically speaking, when the score of transformational leadership changes by one unit, the score of QME tends to move only by 0.107 units in the same direction. Meanwhile, the direct effects of transformational leadership on organizational climate (path coefficient = 0.448, z-value = 8.493, p-value = 0.000) and teachers' self-efficacy (path coefficient = 0.404, z-value = 6.760, p-value = 0.000) were much higher. It is observed that finding whether transformational leadership of the leaders influence the QME is important, but not yet sufficient. Understanding how such leadership influence the QME, as well as other related variables is also crucial.

(2) In real life, the quality management and evaluation of distance education for arts majors in colleges and universities in Liaoning Province are influenced by a number of factors, including location and its surroundings, reputation and historical backgrounds, including factors under this study. The dimensions of transformational leadership identified by this study were consistent with the work of Li Chaoping and Shi Kan (2005, pp. 803–811), which hold that transformational leadership has a four-dimensional structure that includes moral exemplification, vision motivation, leadership charm, and individualized care. The quality and evaluation efficiency of remote learning for art majors can be improved more successfully using these four dimensions. [5]

According to Liu Lili and Kong Man (2020, pp. 97–105), under uncertain global and environmental changes, educational institution leaders would probably be faced with unclear futures, therefore, selection of leaders with such attributes was important. [6]

(3) It should be noted that the characteristics of the samples might have some impacts on how they rated the questionnaire, and hence, the research findings. While almost one-fourth of the samples perceived their affiliation with the provincial level, and about 10 percent were affiliated with the national or top China's professional, the majority of samples (47.04%) were affiliated with organizations that did not fit into any of the categories. It indicated the vast diversity of samples included in the study.

Conflicts of Interest

The authors declare that there is no conflict of interest in relation to the publication of this article.

Author Contributions

Author Prapatpong Senarith and author Sukhum Moonmuang are the tutors of author Luyi Sun. The main research content of this paper is completed by author Luyi

Sun, author Prapatpong Senarith and author Sukhum Moonmuang have the role of supervision and guidance.

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References

- [1] Hair, et. al., Multivariate Data Analysis, 8th ed. United Kingdom: Cengage Learning EMEA. 2017.
- [2] Collier, J.E. Applied Structural Equation Modeling Using AMOS. Newyork: Routledge. 2020.
- [3] Adedeji, Abdulkabir N. et al. Testing Validity of Observed Indicators of Local Content Policy in Nigeria: Evidence from Four-factor Measurement Model. *Journal of Applied Statistics*, 2017, 8(1), 149-170.
- [4] Gaskin, J.; Lim, J. Multigroup analysis, amos plugin. Gaskination's StatWiki. 2018.
- [5] Li, C.P.; Shi K. Structure and measurement of transformational leadership. *Journal of Psychology*, 2005, 37(6), 803-811.
- [6] Liu, L.L.; Kong, M. Research on the Relationship between transformational leadership and teachers' organizational commitment. *Journal of East China Normal University (Education Science Edition)*, 2020, 7, 97-105.



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