

# Transformational Leadership, Technological Competence and Teachers' Performance

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**Abstract:** This study evaluated the extent of transformational leadership and technological competencies of school teachers in selected universities in China. The study further formulated a policy program that ensured the practice of transformational leadership in the involved institutions. It made use of a quantitative research design. More specifically, the study utilized a descriptive-comparative-correlational research design to gather data and further process, analyze, and interpret these. This research was conducted among three (3) selected universities in Hunan Province of China. The Universities are Hunan International Economic University, Hunan Normal University, and Hunan University. The study was conducted among 186 teachers selected from a population of 357. Several statistical tools such as frequency count and percentage, weighted mean, standard deviation, t-test and ANOVA, and Pearson's Correlation was used for the data analysis. Based on the study findings, the majority of the teachers are between 31-40 years old, mostly males, with mostly 16-20 years of teaching experience, and are mostly post-graduates. In the assessment of the transformational Leadership of the superiors, the evaluation showed that the superiors possess a higher level of individualized consideration, followed by idealized influence, then intellectual stimulation, and inspiration motivation. In the assessment of the difference in transformational leadership based on age, the finding suggests that the mean assessment of all the age groups are similar, indicating a balanced distribution of the respondents based on age in individualized consideration, inspiration motivation, and idealized influence. The assessment on technological competence show that the highest dimension is the technological pedagogical knowledge, followed by technological content knowledge, and the technological knowledge. A significant relationship exists between technological leadership, technological competency, and the performance of the teacher superiors. This relationship entails that a transformational leadership practice among the superiors influences the level of technological competency and the performance of the teachers.

**Keywords:** Teacher's Performance; Technological Competence; Transformational Leadership.

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## 1. Introduction

In contemporary society, education systems have changed drastically to meet the learning and teaching requirements needed by students to face the globalized demands of current times. In line with this, there is also the need for teachers to be equipped with the relevant skills and competencies to teach in the most adequate way that improves the overall learning outcomes of students. It is understood that the characteristics of teachers have an influence in their instructional quality, emphasizing the need for evaluating this further to identify areas needing improvement (Baier, 2019). It is also further known that soft skill acquisition in teachers is ever more important, highlighting the need for training and continuous professional development (Tang, 2020). With this being said, it can be deduced that there is a need to ensure that teachers are qualified to take on the responsibility of educating students, particularly with skills suited to the current generation's demands.

To begin with, the following study will tackle three main areas of teachers' current status: transformational leadership, technological competence, and overall performance.

In a changing time, there is also always a need to assess and evaluate the performance of teachers to ensure that educational goals are met. This need has led the researcher to conduct this study as many gaps were realized in existing studies which can be filled by using the experiences of the researcher as a teacher in Hunan International Economic

University. The current leadership board of the institution where the researcher works in is under review and evaluation by the Ministry of education in China due to the need to improve the leadership board and enhance performance in the institution. This school evaluation which is being conducted every 4 years aims to ascertain the leadership and policies of the institution – in other words, the school leaders will be subject to review. Hence, by conducting this research, the study will not only meet the need of the requirements of the students in educational leadership majors but also contribute to the improvement of the transformational leadership practices of Hunan International Economic University.

In addition to this, it is also another significant importance for teachers to correspond to the changing demands of the contemporary world, particularly regarding the advancement of technology. Education has been changing drastically and it has encountered numerous reforms, to which teachers must be prepared to provide quality learning for students.

With the above-mentioned information, it is seen that teachers have a crucial role in the success of education, and in a time where the education system is constantly changing, it is important that educators are equipped with the appropriate skills to teach effectively. Hence, the following study will focus on evaluating the performance of school teachers in selected universities in China, together with their transformational leadership and competence with technology evaluated as well. These are all necessary fields to assess as they can reflect the current status of teachers and as well as

show which areas need improvement and further reform. Ultimately, this study has the main goal of contributing to a policy formulation program that can further enhance these mentioned areas for better teacher development, which will also have a cascading effect on improved student learning and educational outcomes.

## 2. Statement of the Problem

This study aims to evaluate the extent of transformational leadership, technological competencies, and performance of school teachers in selected universities in China. The study further formulated a policy program that ensures the practice of transformational leadership in the involved institutions.

### 2.1. Research Questions

Specifically, the study provided answers to the following research questions:

(1) What is the demographic profile of the teacher-respondents in terms of:

- 1) Age,
- 2) Sex,
- 3) Years of Experience, and
- 4) Highest Educational Attainment?

(2) What is the assessment of the teacher respondents on the transformational leadership style of the superiors in terms of:

- 1) Idealized influence,
- 2) Inspiration motivation,
- 3) Intellectual stimulation, and
- 4) Individualized consideration?

(3) Is there a significant difference in the assessment of the transformational leadership style of the superiors when the respondents' profile is taken as a test factor?

(4) What is the level of technological competency of school teachers in terms of:

- 1) Technological knowledge,
- 2) Technological pedagogical knowledge, and
- 3) Technological content knowledge?

(5) Is there a significant difference in the assessment of the technological competencies of the school teachers when their profile is taken as a test factor?

(6) What is the performance of the teachers in terms of:

- 1) Task performance,
- 2) Interpersonal performance
- 3) Adaptation performance?

(7) Is there a significant difference in the assessment of the teacher's performance of the teachers when their profile is taken as a test factor?

(8) Is there a relationship between the assessment of transformational leadership, technological competencies, and employee performance?

(9) Based on the findings, what policy program may be formulated?

### 2.2. Hypotheses

Based on the objectives of the study mentioned above, the following null hypotheses were proposed:

Ho1 There is no significant difference in the transformational leadership style of superiors when the profile is taken as a test factor.

Ho2 There is no significant difference in the technological competencies of the school teachers when the profile is taken as a test factor.

Ho3 There is no significant difference in the teachers' performance of teachers when the profile is taken as a test

factor.

Ho4 There is no significant relationship between the transformational leadership style of superiors and the technological competencies and employee performance of teachers.

## 3. Methodology

### 3.1. Research Design

The study made use of a quantitative research design. More specifically, the study utilized a descriptive-comparative-correlational research design to gather data and further process, analyze, and interpret these. The variables on demographic profile, transformational leadership, technological competencies, and performance of school teachers will be gathered through a questionnaire and assessed through numerical values, making this a suitable research design to employ for the study. Furthermore, the type of data that will be gathered will also be ordinal (through a Likert Scale), from which the interpretations will be derived accordingly. A quantitative approach is most appropriate as the relationships between variables will be investigated and further assessed. In addition to these, after data had been gathered and processed, it was presented through tabular means, followed by textual interpretations. The results included the respective means, frequency values, and significance values that pertain to each indicator assessed in the study. With this being said, the study is purely quantitative and did not employ any qualitative approaches in order to best answer the study objectives.

### 3.2. Research Locale

This research was conducted among three (3) selected universities in Hunan Province of China.

1) University A

University A was founded in 1997 and is one of the largest private universities in the People's Republic of China. The China University Alumni Association has ranked as one of the top three institutions among over 300 private universities in China for the past eight years.

2) University B

University B is a provincial public university based in Changsha, Hunan, China. The Hunan Provincial People's Government and the Ministry of Education jointly support it. The university is a member of Project 211 and the Double First-Class Construction.

3) University C

University C is a public institution in Changsha, Hunan, China. It is linked with the Ministry of Education. The institution is involved in three projects: Project 211, Project 985, and Double First-Class Construction.

### 3.3. Sampling Technique

With the selected universities, there was a total population size of 357. To get a suitable representative sample for the study Qualtrics Calculator was used. Then, once the sample size is determined, the respondents are chosen through simple random sampling, keeping in mind the selection criteria mentioned above. The sample size is 186. It is also important to note that the sample size accepted a 5% margin of error while maintaining a 95% confidence level. This is a suitable sampling method as the population of teachers in the selected universities is large and an appropriate representative was included through this method while keeping in mind the

constraints of the study.

References must be cited in the text within brackets in numerical order, starting with [1]. Do not use Word's automated numbering features. Consecutive reference number citations should be indicated with an n-dash (–) [2–4] or a comma [5, 6] as necessary. In sentences, use the author names instead of "Reference [7]" or "as in [8]" (e.g., "Smith and Smith [9] show ...").

The reference list must be typed in manually. Do not use Word's References feature or numbered list. In the reference list, provide up to three authors' names; if more than three authors, use "et al." Place a space between an authors' initials. Papers that have not been published should be cited as "unpublished" [7]. Papers that have been submitted or accepted for publication should be cited as "submitted for publication" [8]. Please give affiliations and addresses for personal communications [9]. Use sentence case for the words in a paper title.

## 4. Summary of Findings

Most of the respondents are male. Generally, the age range of the respondents is 31-40 years old. The leadership styles positively influence teachers' behaviors and aspirations, contributing to the educational environment's success.

The differences in transformational leadership based on teachers' age show no significant differences in idealized influence, inspirational motivation, individualized consideration, and overall transformational leadership. However, intellectual stimulation shows a significant difference, with younger teachers rating it higher. There is no significant differences in transformational leadership as regards to sex, indicating both male and female teachers perceive leadership similarly. Also, no significant differences in leadership based on years of experience, except for inspiration motivation suggesting teachers with more experience may feel more inspired. Finally, there is no significant differences in transformational leadership based on educational attainment, suggesting equal treatment across varying education levels.

The assessment of teachers' technological competencies reveals that the highest-rated dimension is technological pedagogical knowledge with a mean of 2.49, indicating only slight evidence of competency. This highlights that teachers lack sufficient knowledge and skills in using modern technological tools. To enhance education quality, educators in China must regularly update their technological proficiency and integrate it effectively into classroom teaching.

The difference in technological competency based on age shows no significant differences across technological knowledge, pedagogical knowledge, content knowledge, and overall competency. This indicates a balanced distribution of responses across all age groups. However, there are no significant differences in technological competency based on educational attainment, indicating that teachers' competency levels are similar regardless of their education level.

The performance of teachers is evaluated in three key areas: task performance, interpersonal performance, and adaptation performance. The highest score is in interpersonal performance, indicating strong collaboration among teachers. Interpersonal skills are crucial for fostering professional learning communities and addressing cultural and relational challenges. Task performance, although rated positively, is the lowest, suggesting a need for improvement in handling

professional duties and instructional tasks. Adaptation performance, slightly higher, can be enhanced through strategies such as fostering a growth mindset, professional development, and encouraging innovation in teaching practices.

The performance of teachers across different age groups, sexes, years of experience, and educational attainment shows no significant differences in most areas such as task performance, interpersonal performance, adaptation performance, and overall performance. This suggests that the teachers' age, sex, experience, and education level do not largely influence their overall performance. Overall, the findings indicate balanced and consistent performance across all demographic groups.

The relationship between transformational leadership, technological competencies, and employee performance shows significant correlations. This implies that transformational leadership practices positively influence both technological competency and teacher performance. The findings suggest that transformational leadership in Chinese schools plays a vital role in enhancing teacher competencies and performance, fostering a culture of innovation, cooperation, and continuous improvement in the educational environment.

## 5. Conclusion

Based on the study findings, the following conclusions are drawn:

1)The majority of the teachers are between 31-40 years old, mostly males, with mostly 16-20 years of teaching experience, and are mostly post-graduates.

2)Superiors possess a higher level of individualized consideration, followed by idealized influence, intellectual stimulation, and inspirational motivation.

3)There is a balanced distribution of the respondents based on age in individualized consideration, inspiration motivation, and idealized influence

4)The technological competence of the respondents the highest dimension is the technological pedagogical knowledge, followed by technological content knowledge, and the technological knowledge. These indicate that the respondents are technically competent.

5)In the assessment of the teachers' technological competence based on profile of the respondents shows it does not have any effect on their technological competence in terms of pedagogical knowledge and technological content knowledge.

6)The results show that the teachers' ability to collaborate and work with each other is highly evident. It also shows a positive response among the respondents, indicating that the teachers can value and accomplish their tasks on time.

7)In the assessment of the teachers based on age, the finding shows that sex plays a vital role in influencing the task performance of the teachers.

8)A significant relationship exists between technological leadership, technological competency, and the performance of the teacher superiors. This relationship entails that a transformational leadership practice among the superiors influences the level of technological competency and the performance of the teachers. It further proves that the use of transformational leadership among Chinese school leaders is essential to an improved competency level and performance of the teachers in the school.

## 6. Recommendations

Based on the study findings, the following are recommended:

1) Future researchers may evaluate the teachers based on other profile demographic factors such as income level and marital status. Moreover, students may also be incorporated in future research so as to evaluate the influence of the technological competencies and performance of the teachers on the student's academic achievement.

2) Transformational Leadership strategies may be incorporated by the superiors. Through the implementation of transformational leadership concepts, namely through tailored attention, Chinese teachers may foster a generation of resilient and self-assured individuals who are equipped to effectively manage the complex challenges ahead.

3) Teachers may use interactive multimedia resources, simulations, virtual labs, and educational software to cater to diverse learning styles and preferences. This knowledge is vital for shaping the future of education and empowering students in a rapidly changing world. By integrating technology into pedagogical practices, teachers can enhance student engagement, foster personalized learning, facilitate access to resources, and cultivate 21st-century skills. Interactive multimedia resources, online simulations, and collaborative digital tools can capture students' interest and provide personalized learning experiences.

4) To foster adaptation performance, strategies can be implemented, such as cultivating a growth mindset, providing targeted professional development, creating communities of practice, and recognizing and rewarding innovation. To improve task performance among Chinese teachers, several strategies can be implemented. These include providing ongoing professional development opportunities, supportive leadership, time management strategies, and fostering a culture of collaboration and peer support. To improve interpersonal performance among Chinese teachers, several strategies can be implemented. These include cultural competence training, which helps teachers understand and appreciate cultural differences, and communication skills development through workshops and seminars.

5) School leaders may prioritize taking into account a variety of leadership philosophies, such as instructional and transformational leadership, in order to fully comprehend how each of these affects student achievement in the setting of Chinese schools.

## 7. Proposed Policy Program

### 7.1. Rationale

As a result of in-depth research, transformational leadership has been found to play an extremely important role in the evaluation of the technological competencies and performance of teachers.

### 7.2. Objectives

The general objectives of this program is to comprehensively improve the transformational leadership, technological competencies, and performance of teachers. The objectives are highlighted in the following:

1) To encourage teachers and school leaders to take on challenges, strive for achievement, and pursue excellence by sharing their contagious excitement and steadfast belief in

each person's potential. These educators would be trained to inspire a feeling of purpose and enthusiasm in their coworkers and students by presenting a compelling picture of the transformational potential of education and the boundless opportunities for individual and group improvement.

2) To improve the technological knowledge, technological content knowledge, and the technological pedagogical knowledge of the teachers. Teachers would be able to exhibit a thorough comprehension of pedagogical concepts and best practices.

3) To improve task performance among Chinese teachers by implementing several strategies such as providing ongoing professional development opportunities, supportive leadership, time management strategies, and fostering a culture of collaboration and peer support.

4) To provide mentorship, feedback, and resources to help teachers navigate challenges and improve their performance. Additionally, fostering a culture of sharing best practices, seeking feedback, and learning from one another can provide valuable opportunities for professional growth and development.

### 7.3. Plan of Implementation

To carry out the above program, the specific tasks and priorities are as follows:

1) Prepare the following resources: first, the resources needed for the suggested program, including funds, meeting places, team building exchange places, trained professional teachers, etc. Second, the purchase of the needed materials for the program,

2) Plan for the activity or strategies to be used by having a consultative meeting with the persons involved in the said program.

3) Request for the needed budget to implement the program smoothly.

4) Summarize all the implementation projects, put forward suggestions, understand the actual effect and improvement space, and sum up experiences and lessons.

5) Evaluate the program to improve the succeeding implementation of other activities.

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