

Transformational Leadership Styles and Innovative Behavior of Teachers: Towards A Proposed Intervention Program

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Abstract: The study investigated the current status of transformational leadership styles and university teachers' innovation behaviors. Additionally, the researcher explored the relationship between transformational leadership styles and innovation behaviors. The study utilized a descriptive correlational research design. A sample size of 363 teachers was computed from a total population of 3956 faculty members from Hunan University and Hunan University of Science and Technology as the respondents for this study, and then stratified sampling was employed to distribute proportionally the respondents from the two schools. The findings of the study are as follows: universities visited have a relatively high proportion of female teachers in their faculty. The teacher group is dominated by young teachers, and the universities visited have a certain balance in the educational level of teachers with various kinds of educational attainment. The teacher group is dominated by teachers with shorter teaching experience, while there are relatively few teachers with longer teaching experience. Leaders are more fair in each leadership style, with no obvious outstanding strengths or weaknesses. The assessment of transformational leadership styles is not influenced by teacher profiles and is not an important factor in the assessment of transformational leadership. Teachers did not show significantly outstanding levels of creativity, innovative practices, and innovative diversity. 5. Teachers' creative behavior is not affected by teachers' sex, age, education, or teaching experience. There is a significant positive correlation between transformational leadership and innovative behavior. Teachers' innovative behavior is influenced by transformational leadership. Adopting a transformational leadership style has a positive impact on promoting teachers' innovative behavior.

Keywords: Transformational leadership styles, Innovative behavior, Intervention program.

1. Introduction

Innovative behavior of university teachers is not only a core indicator and an important observation point for measuring teachers' effective teaching behavior and evaluating their performance, but also an important means for cultivating innovative talents, ensuring the scientific development of education, and realizing educational innovation.

As economic globalization enters a new era and the industry environment becomes more complex and changeable, universities must improve their own innovation capacity to cope with the continuous opportunities and challenges.

Universities need to improve their innovation capabilities to meet continuous opportunities and challenges. Universities can maintain a long-term competitive advantage in the increasingly competitive education market environment by emphasizing innovation-driven development. Universities should have the ability to continuously push the boundaries of innovation and enhance creativity at all levels of the university in order to be invincible in the increasingly competitive education market environment. Among the many factors that influence innovation, leaders are important factors in driving university innovation and leading change; leaders take responsibility for introducing new ideas and realizing organizational vision and have the ability to inspire and cultivate subordinate employees to take the initiative to innovate, while teachers, as participants and executors of university innovation, have far-reaching significance to the development of the university whether they generate positive innovative behavior or not. University leaders must adopt

effective leadership styles and measures to stimulate faculty innovation.

The leadership styles of leaders are diverse, and different leadership styles influence teachers' innovative behaviors through different influence mechanisms. Positive leadership behaviors can effectively stimulate teachers' enthusiasm for their work and thus improve the innovative performance of the university.

A leader's own traits and behaviors influence the perceptions and behaviors of his or her subordinates. Transformational leadership can inspire members to dedicate themselves to achieving team goals and to realize their self-worth within the team by establishing a good team climate. Unlike traditional leadership styles, transformational leaders emphasize communication with employees and their developmental needs to more effectively stimulate innovative behavior.

Transformational leadership refers to making employees aware of their responsibilities to the organization by clarifying the organization's vision and expectations. They lead by example and care, constantly guide, support, and motivate employees to develop their individual talents, and actively create an atmosphere of trust and cooperation in the organization to motivate employees to strive for results that exceed organizational goals.

Qu, Xie, and Rainbow (2017), found that transformational leaders' personality care and role modeling of employees motivate their willingness to try to innovate in order to achieve organizational goals. Previous studies have mostly explored the influence mechanism of the relationship between transformational leadership and innovative behavior based on

intrinsic motivation theory, and psychological empowerment is considered an important intermediate variable. Yang, Xia, and Li, Wen (2019), for example, found that transformational leaders' visionary motivation, personal charisma, and caring led to strong psychological empowerment of employees, which in turn stimulated their innovative behavior. And later, scholars also began to focus on the multi-level attributes of transformational leadership. Xu, Dongsheng (2019) pointed out that organizational consistency transformational leadership effectively promotes employees' innovative behaviors and further influences them to innovate through leadership orientation, but when such transformational leadership varies among employees and creates a sense of unfairness among them, it can weaken employees' willingness to innovate.

To explore the relationship between variables such as leadership style and university teachers' innovative behavior at the university level, there are fewer studies related to university teachers' teams; the target of influence of leadership style is mainly focused on the individual level, and less attention is paid to the degree of influence at the overall team level; studies on the relationship between two variables of leadership style and innovative behavior lack to examine the role of factors related to the nature of the university, the size of the university, and motivation on the relevant variables.

What is the crux of the unstable correlation between transformational leadership and employee innovation? What exactly is the mechanism by which transformational leadership promotes innovative employee performance? Is this mechanism influenced by organizational contextual factors? Is it through the adjustment of corporate leadership style to induce innovative employee behavior? This study will use a completely randomized survey to analyze the relationship between the independent and dependent variables. This study will start with the concept, characteristics, and influencing factors of innovative behavior and transformational leadership styles among college teachers. The progress of research on transformational leadership styles and innovative behaviors will be summarized, and previous research results will be used as the theoretical background of the study. Secondly, this study uses a questionnaire survey and random sampling method to select leaders and teachers of two universities in Hunan Province as the research subjects to investigate the development level of transformational leadership style and innovative behavior. Thirdly, based on the questionnaire survey, this study will integrate previous theoretical research results to investigate transformational leadership styles and innovative behaviors and form a status quo analysis report on the survey results. Based on the current situation analysis report, a series of innovative behavior enhancement programs will be developed to address the problems and weaknesses of transformational leadership style and innovative behavior, solve problems, and eliminate obstacles. Research and explore transformational leadership styles and innovative behaviors, and propose corresponding theoretical and practical bases.

2. Background of the Study

For universities, whether it is target innovation, technological innovation, institutional innovation, environmental innovation, etc., creative people are indispensable. Therefore, how to explore the creativity of employees in the workplace, improve their innovative

behavior, and let innovation land in every workplace is a proposition faced by organizational managers, especially human resource managers.

In the era of knowledge innovation, humans carrying knowledge are an increasingly important resource, which makes people in organizations gradually become a core resource. How innovative university teachers are affects the success or failure of school education and the survival and development of universities.

What enables university faculty to develop innovative behaviors? The study found that managers at all levels play a very important role, not only in spreading innovation through culture and values and expressing the vision of the future development of the company, but also in taking the lead in innovation activities and gaining the full psychological recognition of university faculty members, who are thus committed to their work and produce high innovation performance.

As a constituent cell of the university, the faculty is a direct participant and creator of the university's innovative activities. Therefore, stimulating the innovative behavior of teachers is particularly important for the sustainable, innovative development of universities. While faculty members are the "soldiers" of the university's innovative activities, leaders perform the role of "generals" and are the planners and decision-makers of the university's innovative activities, influencing the university's innovation level. Both leaders and faculty members are the backbone of the university's innovative development in the midst of competition. As leaders of universities, differences in leadership styles inevitably have an impact on the behavior of faculty. Therefore, determining what leadership style can more effectively stimulate the innovative behavior of teachers is an important issue for the sustainable development of university innovation.

Compared to developed countries such as Europe and the United States, the level of innovation in China's universities is still at a lower level. The lack of innovation motivation has also become the death of sustainable development in education in China. In today's competitive economic environment, universities must have excellent innovation capabilities and innovative talents if they want to stand out on this invisible battlefield. How universities can sustainably improve innovation capacity is currently a common focus in the education and academic communities.

Therefore, the innovative behavior of university faculty has been an important concern for administrators and cannot be ignored. Nowadays, how to promote innovation among university teachers has become a hot topic in the academic world. At the same time, as administrators who connect school organizations with teachers, their attitudes and behaviors toward teachers are crucial. With the concept of leadership style, scholars have elaborated and studied different leadership styles from different perspectives and found that transformational leadership styles have significant effects on various types of teacher behaviors, including job performance, employee attitudes, psychological empowerment, employee innovative behaviors, etc.

3. Statement of the Problem

This study focused on exploring the status of transformational leadership styles and university teachers' innovation behaviors, while at the same time exploring the relationship between transformational leadership styles and

innovation behaviors. More specifically, it sought to answer the following questions:

1. What is the profile of Teacher and Leader-respondents in terms of:
 - 1.1 Sex
 - 1.2 Age
 - 1.3 Educational Background
 - 1.4 Years of working Experience
2. What is the assessment of the teacher -respondents on the transformational leadership of their leaders?
 - 2.1 exemplary virtue
 - 2.2 Visionary motivation
 - 2.3 Personalized Care
 - 2.4 Leadership Charisma
3. Is there a significant difference in the assessment of the teachers on the transformational leadership style of their leaders when their profiles are taken as test factors?
4. What is the assessment of the teacher- respondents on their innovative behavior in terms of:
 - 4.1 Creativity
 - 4.2 Innovative Practice
 - 4.3 Innovative Diversity
5. Is there a significant difference in the assessment of the teachers on their innovative behavior when their profiles are taken as test factors?
6. Is there a significant relationship between transformational leadership style of leaders and innovative behavior of the teachers?
7. Based on the output of the study, what innovative action plans can be proposed?

4. Scope and Delimitation of the Study

This study focused on two variables: transformational leadership style, teachers' innovative behaviors, and their relationships. The researcher asked two universities in Hunan Province, China, about their transformational leadership style and faculty innovation behavior. The researcher used stratified sampling to proportionately distribute the 363 respondents to the two schools. The study was conducted during the first semester of the 2023–2024 academic year. The questionnaire data was collected through an online survey because the epidemic control in China was under state control.

The limitations of this study were as follows: First, this study used a cross-sectional research design, which did not allow for adequate causal inference between variables. Future research will use a longitudinal research design to reveal the development of the relationship between transformational leadership styles and teachers' innovative behaviors or an experimental research design to reveal the effects and mechanisms of transformational leadership styles and teachers' innovative behaviors. Second, this study focused on examining the relationship between transformational leadership styles and teachers' innovative behaviors. In addition to factors such as sex, age, education, and years of experience, other psychological or behavioral variables, such as job satisfaction, climate of innovation, and basic psychological needs such as self-efficacy, played a mediating role. Future studies will consider the role of other variables in the above relationships. Third, only university teachers and leaders were selected for this study; future research will include teachers and leaders in junior high and elementary schools. Despite the shortcomings, the results of this study helped him to understand the relationship between transformational leadership styles and teachers' innovative

behaviors to some extent and helped teachers improve their innovative performance.

5. Theoretical Framework

The researcher anchored his research on transformational leadership theory (Seong, S., Kim, Y., & Szulanski, G., 2015). This theory is appropriate since it is a model of leadership that relies on the encouragement of a team to realize overall success. By raising a team's morale and self-confidence, the team can then align itself with an overall vision or common purpose.

Transformational leaders have three characteristics: providing vision, inspiring, and being action-oriented. Providing a vision: This involves creating a blueprint for the future, or stating a future condition that people agree with and are enthusiastic about, by creating a vision that reinforces people's sense of responsibility, provides a common goal, and sets people on a path to success. Inspire: Here, the leader's role is to directly motivate the organization's employees and inspire them to action. Different leaders inspire in different ways, but the most common way is for the leader to demonstrate the passion and drive of the individual by coaching the individual to work with the majority to bring the passion together and express confidence in their ability to succeed. Focus on action: Leaders help people act and face challenges from a psychological perspective. It is envisioned that individuals have a vision and are motivated, and that they may need mental help in accomplishing their tasks. The counterpart to the transformational leader is the transactional leader, and three main characteristics exist in this type of leadership. The first is structured, where the leader invests time in building teams that are synergistic with the business's strategy while creating a structure in which it is clear what type of behavior the organization needs. The process involves setting goals, establishing standards, and defining roles and responsibilities; the second characteristic is control, which involves creating systems and procedures for measuring, monitoring, evaluating behaviors and results, and managing behaviors; and the third characteristic is consistent reward, which includes rewards and punishments for issues that align employee behavior with the behaviors required by the change.

It is clear that transformational leadership styles seem to be more effective in schools during change, but different leadership styles have different strengths and weaknesses.

At universities where relationships are more humanistic and motivational, the transformational leadership style focuses more on the intra-team relational climate than other types of leadership styles. In the study, new dimensions of transformational leadership are interpreted in the context of Chinese organizations: moral leadership, leadership charisma, visionary motivation, and personalized care, in which the connotations of visionary motivation and leadership charisma are interpreted in the same way as the findings of foreign scholars. The concept of moral exemplarity includes the leader's exemplary leadership by example, while the concept of personalized care includes the leader's concern for the lives of his subordinates.

The main reason why a transformational leadership approach can greatly facilitate the implementation and enforcement of team motivation policies and help members of the organization gain higher motivation is that a high level of team motivation can earn members of the organization greater autonomy and rights to work, thus having a significant impact on achieving team goals through motivation, which

can significantly improve the innovative behavior of employees and can effectively improve innovative behavior,

thus increasing the overall innovation efficiency of the team. As shown in the figure 1.

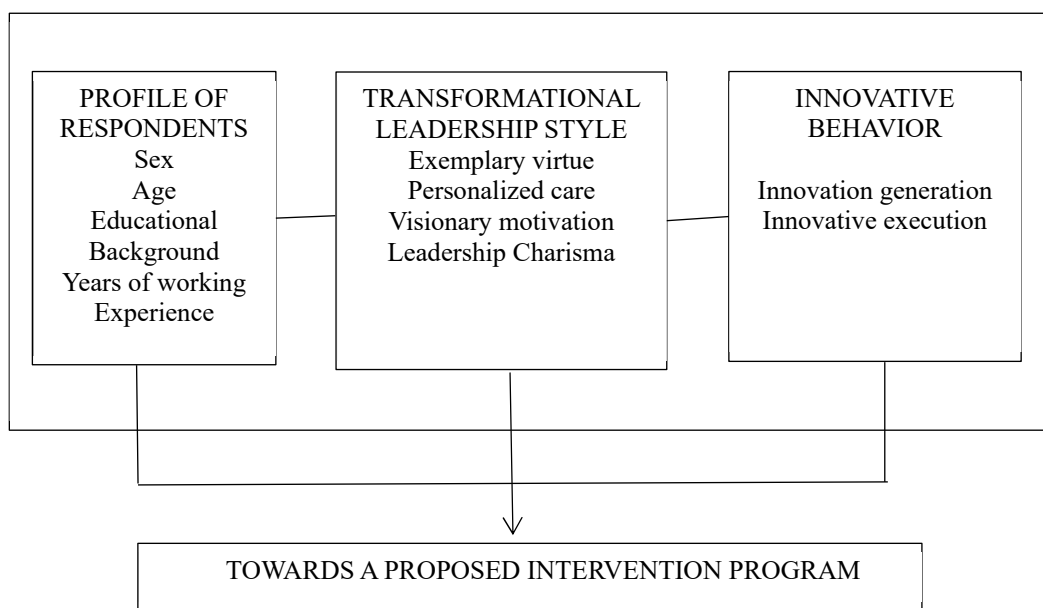


Figure 1. Research Paradigm

In this study, a quantitative design was used to examine these variables. The first variable involved profiles of teacher and leader respondents, including sex, age, educational background, and years of working experience. The second variable was transformational leadership style, including exemplary virtue, personalized care, visionary motivation, and leadership charisma. The third variable was innovative behavior, including innovation generation and innovation execution.

These procedures included the use of questionnaires as the primary instrument to obtain input from identified leadership and faculty respondents for this study. The interviews and focus group discussions conducted to confirm the interpretation of the results were also described. Then, the relationship between the two independent variables was analyzed, as well as the differences in the subgroup variables of sex, age, education, and years of experience. In addition, the relationship between the two independent variables was sought. Finally, the teachers' perceptions of the main variables were combined to propose the best innovative action plan based on the results of the study.

Hypothesis

Ho1. There is no significant difference in the assessment of the teachers on the transformational leadership style of their leaders when their profile is taken as a test factor.

Ho2. There is no significant difference in the assessment of the innovative behavior of the teacher respondents when the profile is taken as a test factor.

Ho3. There is no significant relationship between the transformational leadership style of leaders and the innovative behavior of teacher respondents.

6. Methodology

This chapter describes the research design, research location, sampling methods, research instruments, data collection procedures, ethical considerations, and statistical processing to be used after data collection.

7. Research Design

This study used a comparative correlational-descriptive research design. Comparative correlational descriptive research aims to describe and compare phenomena and characteristics between different groups or under different conditions. In this study, it was used to describe teachers and leaders in terms of sex, age, educational background, and years of experience and to compare the differences between them. To examine the relationship between different variables, such as the relationship between leadership style and teachers' innovative behavior. It explored the correlation between transformational leadership style and innovative behavior by collecting information about teachers' evaluations of their leaders and evaluations of their own innovative behavior.

This study started with the concept, characteristics, and influencing factors of innovative behavior and transformational leadership styles among college teachers. The progress of research on transformational leadership styles and innovative behaviors was summarized, and previous research results were used as the theoretical background of the study. Secondly, this study used a questionnaire survey and random sampling method to select leaders and teachers of two universities in Hunan Province as the research subjects to investigate the development level of transformational leadership style and innovative behavior. Thirdly, based on the questionnaire survey, this study integrated previous theoretical research results to investigate transformational leadership styles and innovative behaviors and form a status quo analysis report on the survey results. Based on the current situation analysis report, a series of innovative behavior enhancement programs were developed to address the problems and weaknesses of transformational leadership style and innovative behavior, solve problems, and eliminate obstacles. Research and explore transformational leadership styles and innovative behaviors and propose corresponding theoretical and practical bases.

8. Research Locale

In this study, leaders and teachers from two universities in Hunan Province, China, were briefly described as follows:

Hunan University (<https://www.hnu.edu.cn>), located in Changsha City, Hunan Province, is a national key university directly under the Ministry of Education of the People's Republic of China. It is a national model university for deepening innovation and entrepreneurship education reform, a base for transformation of scientific and technological achievements and technology transfer in higher education, a national model university for intellectual property rights, and a national base for cultural quality education for college students. As of December 2022, the university covers an area of 2.41 million square meters, with a building area of 1.34 million square meters and a collection of 7.634 million books; has 27 colleges offering 78 undergraduate majors; has 28 postdoctoral research stations; and has more than 4,300 faculty members, including 2,307 full-time teachers and more than 36,000 full-time students.

Hunan University of Science and Technology (<https://www.hnust.edu.cn>), located in Xiangtan City, is a university jointly built by the Hunan Provincial People's Government, the National Defense Science and Technology Industry Bureau, and the former State Administration of Work Safety, a university supported by the National "Midwest University Basic Capacity Building Project" and a university in Hunan Province. "It is a university jointly built by Hunan Provincial People's Government, the National Defense Science and Technology Industry Bureau, and the former State Administration of Work Safety. As of December 2022, the university covers an area of 3004.67 mu, with a building area of 1,116,600 square meters; there are 20 teaching colleges, offering 98 undergraduate majors; 2550 teaching staff, including 1649 full-time teachers; and 32597 full-time undergraduate students.

Population and Sampling

The researcher utilized Slovin's formula to compute the number of samples to be selected from a total population of 3956 faculty members of Hunan University and Hunan University of Science and Technology as the respondents for this study. Then stratified sampling was employed to proportionally distribute the respondents from the two schools.

The table below shows the population and target respondents based on random sampling with a margin of error of 5%.

Table 1. Sample size distribution

University	Teacher	Sample
Hunan University	2307	212
Hunan University of Science and Technology	1649	151
Total	3956	363

9. Data Gathering

The study used a researcher-made questionnaire as the primary data collection tool. The contents were crafted based on literature readings, the information shared by the research adviser, and from the focus group discussion.

It was divided into three parts; the first part deals with the respondents' sex, age, education, and years of work experience.

The second section focused on transformational leadership

styles, including exemplary virtue, personalized care, visionary motivation, and leadership charisma. The third section focused on teachers' innovative behaviors and is divided into two areas: innovation generation and innovation execution.

10. Validation of Instruments

Reliability statistics. For the reliability test, the Cronbach alpha coefficient generated using SPSS is 0.824. It was generally believed that the reliability of the scale is very good when the reliability is 0.7–0.9. Therefore, based on the value obtained, the questionnaire was reliable.

Validation of the questionnaire. After the suggestions and comments from the adviser, a draft for approval was prepared to have the questionnaire validated by members of the panel. The questionnaire was further evaluated and validated using the Cronbach Alpha index of reliability to further examine and analyze its consistency and reliability. Copies of the draft were given to at least 20 teachers who were requested to provide responses to determine whether the contents of the questionnaire were clear, concise, accurate, reliable, and comprehensible for content validation. Suggestions from the experts were incorporated for the improvement of the instrument. A final copy was then produced by the researcher, after which the instrument was approved for reproduction.

Administration of the questionnaire. After passing the questionnaire validation, the researcher sought permission from the school leaders of the president of Hunan University. Then, the researcher sought permission from the deans of the university to administer the questionnaire among the leaders and teachers.

The number of questionnaires distributed at Hunan University and Hunan University of Science and Technology is considered in the table of the distribution of respondents. Through the school or department deans, faculty members were asked to answer the questionnaire during their free time. After they finished answering the questionnaire, a copy of the questionnaire was picked up.

Scoring of Responses Data collected from respondents was given a weight from 1 to 4, with 1 being the lowest and 4 being the highest. The scales that measured leaders and teachers were as follows:

Table 2. Profile of the Respondents' Scale

Point Value	Scale Range	Descriptive Interpretation
4	3.51 – 4.00	Excellent Strongly agree
3	2.51 – 3.50	Good Agree
2	1.51 – 2.50	Fair Disagree
1	1.00 – 1.50	Poor Strongly disagree

11. Data Collection Procedure

Prior to administering the questionnaire, consent was obtained from the presidents of Hunan University and Hunan University of Science and Technology, and an informed consent was obtained from managerial and faculty respondents. Each respondent was given a link to complete the questionnaire. Prior to the test, the respondent researcher explained the requirements and instructions, emphasizing the

principle of confidentiality, and then the respondent began filling out the questionnaire online. At the end of the test, respondents received a small gift to express their gratitude.

All data was collected, organized, tabulated, and analyzed according to approved statistical methods. During the qualitative phase, interviews and focus group discussions were used to collect data.

Selected deans and faculty were interviewed. The researcher took this opportunity to conduct such surveys in the form of questionnaires. Based on the problem statement, interview questions posed by the researcher were considered during this process. The selection of interviewees also took into account the different situations that were considered representative of the faculty as a whole. Respondents were

asked to corroborate the data and served as input data to support the findings.

12. Presentation Analysis and Interpretation of Data

This chapter presents the presentation, analysis, and interpretation of data. The discussions are based on the sequence of the statement of the problem, while analysis and interpretation are based on the treatment of data and guided by the literature and studies gathered in this study.

Demographic Profile of the teacher -Respondents (Problem # 1)

Table 3. Profile of the Respondents

Profile	Frequency	Percentage
Sex		
Male	177	48.8%
Female	186	51.2%
Total	363	100%
Age		
20-35 years old	176	48.5%
36-50 years old	91	25.1%
over 50 years old	96	26.4%
Total	363	100%
Educational Attainment		
Undergraduate	132	36.4%
Master	117	32.2%
PhD	114	31.4%
Total	363	100%
Years of Teaching Experience		
1-10 years	205	56.5%
11-20 years	61	16.8%
21-30 years	69	19.0%
30+ years	28	7.7%
Total	363	100%

As shown in Table 3, in terms of sex, there were 177 male teachers (48.8%) and 186 female teachers (51.2%). Most of the respondents are female teachers. This indicates that universities visited have a relatively high proportion of female teachers in the faculty.

In terms of age, 176, or 48.5%, of the teachers belonged to the age group of 20–35, 91, or 25.1%, to the age group of 36–50, and 96, or 26.4%, to the age group of 50 and above. The majority of the respondents belonged to the age group of 20 to 35 years. This indicates that the teaching staff of universities visited is dominated by young teachers, while relatively few teachers are older.

In terms of educational attainment, 132, or 36.4%, of the teachers had bachelor's degrees, 117, or 32.2%, had master's degrees, and 114, or 31.4%, had doctoral degrees. The educational attainment of the teachers is basically balanced. This means that the universities visited have a certain balance

in terms of the educational level of their faculty members with all types of degrees.

In terms of the number of years of teaching experience, 205 or 56.5% had 1 to 10 years; 61 or 16.8% had 11 to 20 years; 69 or 19.0% had 21 to 30 years; and 28 or 7.7% had more than 30 years. Most of the teachers interviewed had been teaching for 1 to 10 years. This means that the faculty of universities visited is dominated by teachers with shorter years of teaching experience, while there are relatively few teachers with longer years of teaching experience.

II. The assessment of the teacher-respondents as regards their transformational leadership of their leaders (Problem #2)

This section provides respondents' assessments of the transformational leadership styles of their leaders. It includes exemplary virtue, visionary motivation, personalized care, and leadership charisma.

Table 4. Assessment of teacher -respondents as regards their Transformational Leadership Style in Terms of Exemplary Virtue

Exemplary Virtue	Mean	Qualitative Description	Interpretation
1. My leader demonstrate strong integrity and honesty and does not seek personal benefits.	2.46	Fair	Disagree
2. My leader can find viable solutions to any unexpected stressful situations.	2.25	Fair	Disagree
3. My leaders works for the greater good of the organization and not just his own personal gains does not care about personal gains and losses, and works wholeheartedly.	2.21	Fair	Disagree
4. My leader possesses and demonstrates the following virtues : justice , courage, prudence, temperance and fortitude	2.21	Fair	Disagree
5. My leader is highly moral when it comes to financial matters	2.23	Fair	Disagree
6. My leader empower the employees and encourage them to think outside the box	2.23	Fair	Disagree
7. My leader reward team members who exemplify excellence and embody the core purpose of the organization.	2.16	Fair	Disagree
8. My leader uses his power humanely and justly	2.24	Fair	Disagree
Composite Mean	2.25	Fair	Disagree

Legend: 3.51-4.00 Excellent/Strongly agree; 2.51-3.50 Good/Agree; 1.51-2.50 Fair/Disagree ; 1.00-1.50 Poor/Strongly disagree

Table 4 shows the level of exemplary virtue factor of the respondents in terms of transformational leadership style, where the following results were obtained for the following indicators:

The highest scoring indicator is "My leader demonstrate strong integrity and honesty and does not seek personal benefits" with a mean of 2.46 or fair; this means that respondents generally believe that their leaders perform well in this area, have strong integrity and honesty qualities and does not seek personal benefits. The second highest scoring indicator was "My leader can find viable solutions to any unexpected stressful situations" with a mean of 2.25 or fair; The third highest scoring indicator is "My leader uses his power humanely and justly" with a mean of 2.24 or fair; The fourth highest scoring indicators were "My leader is highly moral when it comes to financial matters" and "My leader empowers the employees and encourage them to think outside

the box" with a mean of 2.24 or fair. The fourth highest scoring indicator was "My leader is highly moral when it comes to financial matters" and "My leader empowers the employees and encourages them to think outside the box" with a mean of 2.23 or fair. The fifth highest scoring indicators were "My leader works for the greater good of the organization and not just his own personal gains, does not care about personal gains and losses, and works wholeheartedly" and "My leader possesses and demonstrates the following virtues: justice, courage, prudence, temperance, and fortitude". Fortitude" had a mean of 2.21 or fair. The lowest scoring indicator was "My leader rewards team members who exemplify excellence and embody the core purpose of the organization," with a mean of 2.16 or fair. This means that respondents believe that their leaders could improve in rewarding those who exemplify excellence and embody the core purpose of the organization.

Table 5. Assessment of teacher -respondents as regards their Transformational Leadership Style in Terms of Visionary motivation

Visionary motivation	Mean	Qualitative Description	Interpretation
1. My leaders is openminded and take time to listen to their staff to improve upon the goal , rather than pressure others in favor of his vision.	2.24	Fair	Disagree
2. My leader makes staff aware of the school's philosophy and development goals.	2.28	Fair	Disagree
3. My leader boost the morale and motivate the staff to continue working toward the future rather than dwelling on small setbacks	2.24	Fair	Disagree
4. My leader has a strong interpersonal and communication skill which enable him to communicate the goals of the organization	2.26	Fair	Disagree
5. My leader invites the staff to join him in meeting the organizations goals by creating a compelling vision around those goals.	2.18	Fair	Disagree
6. My leader often works with staff to analyze the impact of the school's overall goals.	2.19	Fair	Disagree
Composite Mean	2.23	Fair	Disagree

Legend: 3.51-4.00 Excellent/Strongly agree; 2.51-3.50 Good/Agree; 1.51-2.50 Fair/Disagree ; 1.00-1.50 Poor/Strongly disagree

Table 5 shows the level of visionary motivational factors of the respondents in terms of transformational leadership style, where the following results were obtained for the following indicators:

The highest scoring indicator is "My leader makes staff

aware of the school's philosophy and development goals" with a mean of 2.28 or fair; this means that their leaders perform better in communicating the school's philosophy and development goals to their staff, so that the staff have a vision of the school and some understanding. The second highest

scoring indicator was "My leader has a strong interpersonal and communication skill which enables him to communicate the goals of the organization" with a mean of 2.26 or fair; the third highest scoring indicators were "My leaders are openminded and take time to listen to their staff to improve upon the goal , rather than pressure others in favor of his vision" and "My leader boosts the morale and motivates the staff to continue working toward the future rather than dwelling on small setbacks. "The fourth highest scoring indicator was "My leader often works with staff to analyze the impact of the school's overall goals" with a mean of 2.19 or

fair; The lowest scoring indicator was "My leader invites the staff to join him in meeting the organizations goals by creating a compelling vision around those goals" with a mean of 2.18 or fair. This means that respondents believe that their leaders have room for improvement in creating a compelling vision and inviting the staff to join them in meeting the organization's goals. The overall composite mean of 2.23 was interpreted as fair. This indicates that the respondents rated their leaders as fair in the area of visionary motivational factors.

Table 6. Assessment of teacher -respondents as regards their Transformational Leadership Style in Terms of Personalized care

Personalized care	Mean	Qualitative Description	Interpretation
1. My leaders take into account the actual situation of individual employees in the process of dealing with them.	2.20	Fair	Disagree
2. My leader is willing to help employees solve difficulties in life and family.	2.21	Fair	Disagree
3. My leader often communicates with employees to understand their work, life, and family situation.	2.20	Fair	Disagree
4. My leaders are patient in guiding employees and answering their doubts.	2.25	Fair	Disagree
5. My leader cares about the work, life and growth of the staff and sincerely makes suggestions for the development of the staff.	2.22	Fair	Disagree
6. My leaders creates conditions for employees to play their strengths.	2.17	Fair	Disagree
Composite Mean	2.21	Fair	Disagree

Legend: 3.51-4.00 Excellent/Strongly agree; 2.51-3.50 Good/Agree; 1.51-2.50 Fair/Disagree; 1.00-1.50 Poor/Strongly disagree

Table 6 shows the level of personalized care factor of the respondents in terms of transformational leadership style, where the following results were obtained for the following indicators:

The highest scoring indicator is "My leaders are patient in guiding employees and answering their doubts," with a mean of 2.25 or fair; this means that their leaders are better at guiding employees and answering their doubts with the traits of patience and caring for their employees. The second highest scoring indicator is "My leader cares about the work, life, and growth of the staff and sincerely makes suggestions for the development of the staff" with a mean of 2.22 or fair; the third highest scoring indicator is "My leader is willing to help employees solve difficulties in life and family" with a mean of 2.21 or fair; and the fourth highest scoring indicator is "My leaders take into account the actual situation of individual employees in the organization" with a mean of 2.21 or fair. My leaders take into account the actual situation of

individual employees in the process of dealing with them" and "My leader often communicates The fourth highest scoring indicator was "My leaders take into account the actual situation of individual employees in the process of dealing with them" and "My leader often communicates with employees to understand their work, life, and family situation" with a mean of 2.20 or fair; the lowest scoring indicator was "My leaders create conditions for employees to play their strengths". The lowest scoring indicator was "My leaders create conditions for employees to play their strengths," with a mean of 2.17, or fair. This means that respondents believe that their leaders have room for improvement in providing employees with the opportunity to play with their strengths and talents and may need to do more to create conditions and opportunities to support employee development. The overall composite mean of 2.21 was interpreted as fair. This indicates that respondents rated leaders as fair in the personalized care factor.

Table 7. Assessment of teacher -respondents as regards their Transformational Leadership Style in Terms of Leadership Charisma

Leadership Charisma	Mean	Qualitative Description	Interpretation
1. My leader ensure that each staff individually contributes to the organizations success and leverage their unique strength	2.27	Fair	Disagree
2. My leader is open-minded and has a strong sense of innovation.	2.21	Fair	Disagree
3. My leader is able to convince the staff the value that they bring to the organization and show them how their contributions impact the strategic interests of the organization	2.21	Fair	Disagree
4. My leader use his personality and communication style to gain the admiration of his follower.	2.26	Fair	Disagree
5. My leader pays attention to what is being said and listens with interest.	2.27	Fair	Disagree
6. My leader is bold in grasping and managing, and is good at handling difficult problems.	2.28	Fair	Disagree
Composite Mean	2.25	Fair	Disagree

Legend: 3.51-4.00 Excellent/Strongly agree; 2.51-3.50 Good/Agree; 1.51-2.50 Fair/Disagree ; 1.00-1.50 Poor/Strongly disagree

Table 7 shows the level of leadership charisma factor of the respondents in terms of transformational leadership style, where the following results were obtained for the following indicators:

The highest scoring indicator is "My leader is bold in grasping and managing and is good at handling difficult problems," with a mean of 2.28 or fair; this means that the respondents believe that their leaders are better at handling difficult and complex problems and have the courage and ability to take decisive steps to resolve difficulties. The

second highest scoring indicators were "My leader ensures that each staff member individually contributes to the organization's success and leverages their unique strengths" and "My leader pays attention to what is being said and lists with interest" with a mean of 2.27, or fair; the third highest scoring indicator was "My leader uses his personality, and the third highest scoring indicator was "My leader uses his personality and communication style to gain the admiration of his followers" with a mean of 2.26, or fair.

Table 8. Summary Table on the Assessment of teacher-respondents as regards their Transformational Leadership Style

Transformational Leadership Style	Mean	Qualitative Description	Interpretation
Exemplary Virtue	2.25	Fair	Disagree
Visionary motivation	2.23	Fair	Disagree
Personalized care	2.21	Fair	Disagree
Leadership Charisma	2.25	Fair	Disagree
Over-all Mean	2.23	Fair	Disagree

Legend: 3.51-4.00 Excellent/Strongly agree; 2.51-3.50 Good/Agree; 1.51-2.50 Fair/Disagree; 1.00-1.50 Poor/Strongly disagree

Table 8 shows the respondents' teachers' assessment of their transformational leadership style, with Exemplary Virtue averaging 2.25 or fair; Visionary Motivation averaging 2.23 or fair; Personalized Care averaging 2.21 or fair; and Leadership Charisma's fair score being 2.25 or fair. The overall mean score is 2.23, which is fair. This means that the respondents rated the leaders as fair in terms of transformational leadership style. This means that leaders in this school perform more evenly across leadership styles, with

no significant outstanding strengths or weaknesses.

III. Significant Difference in the Assessment of Transformational Leadership Style when the profile of the teacher-respondents is considered. (Problem #3)

This section describes the differences in respondents' levels of assessment of the transformational leadership style when grouped according to profile variables such as sex, age, educational attainment, and years of teaching experience.

Table 9. Differences in the Respondents' assessments of Transformational Leadership Style when Grouped according to Sex

Transformational Leadership	Sex	Mean	Computed T-value	Sig	Decision on Ho	Interpretation
Exemplary Virtue	Male	2.24	-.079	.937	Accepted	Not Significant
	Female	2.25				
Visionary motivation	Male	2.23	.229	.819	Accepted	Not Significant
	Female	2.22				
Personalized care	Male	2.19	-.536	.592	Accepted	Not Significant
	Female	2.22				
Leadership Charisma	Male	2.21	-1.067	.287	Accepted	Not Significant
	Female	2.28				
Over-all	Male	2.22	-.384	.701	Accepted	Not Significant
	Female	2.24				

*Level of Significance: * is significant at the 0.05 level (2-tailed)*

Table 9 shows the results of the mean comparison analysis of respondents' assessments of transformational leadership style when grouped by sex.

The calculated t-value for exemplary virtues is -0.079 with a significance value of 0.937; the calculated t-value for visionary is 0.229 with a significance value of 0.819; the calculated t-value for personalized care is -0.536 with a significance value of 0.592; and the calculated t-value for charisma of leadership is -1.067 with a significance value of

0.287, which rejects the original hypothesis which means that there is no significant difference in the assessment of the teacher respondents when their sex is used as a test factor. The overall significant value of -0.384 or interpreted as not significant is greater than the significance criterion of 0.05 which means that sex is not a significant determinant of transformational leadership style when the original hypothesis is accepted.

Table 10. Differences in the teacher Respondents' Assessments of Transformational Leadership Style when Grouped according to Age

Transformational Leadership	Age	Mean	Computed F-value	Sig	Decision on Ho	Interpretation
Exemplary Virtue	20-35 y/o	2.24	.887	.413	Accepted	Not Significant
	36-50 y/o	2.18				
	50+ y/o	2.31				
Visionary motivation	20-35 y/o	2.21	.412	.663	Accepted	Not Significant
	36-50 y/o	2.21				
	50+ y/o	2.28				
Personalized care	20-35 y/o	2.19	.067	.935	Accepted	Not Significant
	36-50 y/o	2.20				
	50+ y/o	2.22				
Leadership Charisma	20-35 y/o	2.23	.607	.546	Accepted	Not Significant
	36-50 y/o	2.22				
	50+ y/o	2.30				
Over-all	20-35 y/o	2.22	.487	.615	Accepted	Not Significant
	36-50 y/o	2.20				
	50+ y/o	2.28				

Table 10 shows the analysis of variance (ANOVA) of teacher respondents' assessment of transformational leadership styles when grouped by age:

The overall result shows that the calculated f-value of 0.487 with a significance value of 0.615, which means that it is interpreted as non-significant, is greater than the criterion of a significant value of 0.05, and the original hypothesis is accepted. When the teacher respondents were grouped by age, there was no significant difference in their assessment of

transformational leadership style. It means that age is not a significant factor that affects the assessment of the transformational leadership style of teacher respondents.

IV. The assessment of the teacher respondents as regards their job satisfaction (Problem #4)

This section provides respondents' assessments of the innovative behavior of the teacher. It includes creativity, innovative practice, and innovative diversity.

Table 11. Assessment of teacher -respondents as regards their innovative behavior in Terms of Creativity

Creativity	Mean	Qualitative Description	Interpretation
1. Will often generate creative ideas and thoughts in the workplace.	2.26	Fair	Disagree
2. Actively communicate with other colleagues to promote idea sharing.	2.29	Fair	Disagree
3.As long as one is determined to make creative efforts, most of them will be successful.	2.29	Fair	Disagree
4.. Will look at problems from different perspectives to gain in-depth concise.	2.26	Fair	Disagree
5.Try to come up with new ideas or solutions to some problems.	2.20	Fair	Disagree
6. I prefer to create new things rather than just improve the old ones.	2.19	Fair	Disagree
7. I often have a new perspective when looking at old problems.	2.28	Fair	Disagree
8.I choose brainstorming activity to spark creativity	2.27	Fair	Disagree
9. I used solution ideation to help encourage innovative ideas	2.31	Fair	Disagree
Composite Mean	2.26	Fair	Disagree

Legend: 3.51-4.00 Excellent/Strongly agree; 2.51-3.50 Good/Agree; 1.51-2.50 Fair/Disagree ; 1.00-1.50 Poor/Strongly disagree

Table 11 shows the level of creativity factors in terms of innovative behavior of the respondents, where the following results were obtained for the following indicators:

The highest scoring indicator is "I use solution ideation to help encourage innovative ideas," with a mean of 2.31 or fair; this means that the respondents tend to use the solution ideation approach to stimulate and encourage innovative ideas. They may be good at guiding and supporting team members to generate new ideas and provide solutions to problems. The second highest scoring indicators were "Actively communicate with other colleagues to promote idea sharing" and "As long as one is determined to make creative efforts, most of them will be successful". Most of them will be successful" with a mean of 2.29 or fair; the third highest scoring indicator is " I often have a new perspective when

looking at old problems" with a mean of 2.28 or fair; the fourth highest scoring indicator is " I often have a new perspective when looking at old problems" with a mean of 2.28 or fair; and the fourth highest scoring indicator is " I often have a new perspective when looking at old problems" with a mean of 2.28 or fair. The third highest scoring indicator was "I often have a new perspective when looking at old problems" with a mean of 2.28 or fair; the fourth highest scoring indicator was "I choose brainstorming activity to spark creativity" with a mean of 2.27 or fair; and the fifth highest scoring indicator was "Will often generate creative ideas and thoughts in the workplace" with a mean of 2.27 or fair. and thoughts in the workplace" and "Will look at problems from different perspectives to gain in-depth concise". The sixth highest scoring indicator was "Try to

come up with new ideas or solutions to some problems" with a mean of 2.20 or fair; the lowest scoring indicator was "I prefer to create new things rather than just improve the old ones". rather than just improve the old ones", with a mean of 2.19 or fair. This means that respondents relatively prefer to create new things rather than just improve the existing ones. This could mean that they emphasize more on innovative thinking and creating new values. The overall composite mean of 2.26 was interpreted as fair. This indicates that the respondents assessed innovative behaviors as a whole at an

fair level. Respondents showed some degree of positive tendencies in many of the creativity factors, but may have relatively less innovative behavior in some areas.

V. Significant Difference on the Assessment of Innovative Behavior when the profile of the teacher-respondents is Considered. (Problem #5)

This section describes the differences in respondents' levels of assessment of innovative behavior when grouped according to profile variables such as sex, age, educational attainment, and years of teaching experience.

Table 12. Differences in the Respondents' assessments of innovative behavior when Grouped according to Sex

Innovative behavior	Sex	Mean	Computed T-value	Sig	Decision on Ho	Interpretation
Creativity	Male	2.24	-.520	.640	Accepted	Not Significant
	Female	2.27				
Innovative Practice	Male	2.24	-.615	.539	Accepted	Not Significant
	Female	2.28				
Innovative Diversity	Male	2.25	-.211	.833	Accepted	Not Significant
	Female	2.27				
Over-all	Male	2.25	-.478	.633	Accepted	Not Significant
	Female	2.27				

*Level of Significance: * is significant at the 0.05 level (2-tailed)*

Table 12 shows the results of the mean comparison analysis of respondents' assessments of innovative behavior when grouped by sex.

The calculated t-value for innovation is -0.520 with a significance value of 0.640; the calculated t-value for innovative practices is -0.615 with a significance value of 0.593; and the calculated t-value for diversity of innovations is -0.211 with a significance value of 0.833. The original hypothesis is accepted since the significance value is greater

than 0.05, which means that when the sex of the teacher respondents is used as a testing factor, their assessments show no significant difference. The overall significant value of -0.478, interpreted as not significant, is greater than the significance criterion of 0.05, which means that sex is not a significant determinant of innovative behavior when the original hypothesis is accepted.

VI. The relationship between transformational leadership style of leaders and innovative behavior of the teachers

Table 13. Relationship between transformational leadership style of leaders and innovative behavior of the teachers

		Creativity	Innovative Practice	Innovative Diversity	Innovative behavior
Exemplary Virtue	r	.635	.539	.545	.609
	Sig	.000	.000	.000	.000
	Decision on Ho Interpretation	Rejected Significant	Rejected Significant	Rejected Significant	Rejected Significant
Visionary motivation	r	.707	.602	.593	.674
	Sig	.000	.000	.000	.000
	Decision on Ho Interpretation	Rejected Significant	Rejected Significant	Rejected Significant	Rejected Significant
Personalized care	r	.784	.702	.673	.766
	Sig	.000	.000	.000	.000
	Decision on Ho Interpretation	Rejected Significant	Rejected Significant	Rejected Significant	Rejected Significant
Leadership Charisma	r	.807	.719	.701	.790
	Sig	.000	.000	.000	.000
	Decision on Ho Interpretation	Rejected Significant	Rejected Significant	Rejected Significant	Rejected Significant
Transformational Leadership	r	.804	.702	.688	.778
	Sig	.000	.000	.000	.000
	Decision on Ho Interpretation	Rejected Significant	Rejected Significant	Rejected Significant	Rejected Significant

Legend: a significance value of sig less than 0.05 rejects the original hypothesis and indicates a significant difference.

As shown in Table 13, the calculated r-value of transformational leadership and innovative behavior is 0.778 with a significance value of 0.000, and the hypothesis is rejected as the significance value is less than the set

significance level of 0.05. This indicates that there is a significant positive correlation between transformational leadership and innovative behavior. This further indicates that the degree of innovative behavior among teachers is

influenced by transformational leadership.

13. Rationale

It was found that there is a significant positive correlation between transformational leadership and innovative behavior, and there is also a significant positive correlation between other dimensions of transformational leadership and the dimensions of innovative behavior. This means that leaders can effectively promote teachers' innovative behavior when they enhance their own level of transformational leadership. The results of the study show that leaders play a key role in the development of teachers' innovative behavior. By motivating, rewarding, communicating, and supporting, leaders can provide teachers with positive, innovative environments and conditions that will stimulate their innovative potential. The action plan involves the participation and cooperation of teacher teams. By organizing innovation workshops, exchange activities, and professional development training, teachers can increase interaction and cooperation among themselves and promote the exchange and collision of innovative ideas, thus improving their innovative behaviors. The action plan emphasizes the creation of an inclusive culture that values diversity, which helps teachers share different perspectives and ideas in an open and inclusive environment, thus stimulating innovative sparks. A culture of diversity also promotes mutual learning and growth among teachers.

14. Conclusions

Based on the presented findings of the study, the researcher came up with the following conclusions:

1. Universities visited have a relatively high proportion of female teachers in their faculty. The teacher group is dominated by young teachers, and the universities visited have a certain balance in the educational level of teachers with various kinds of educational attainment. The teacher group is dominated by teachers with shorter teaching experience, while there are relatively few teachers with longer teaching experience.

2. Leaders are more fair in each leadership style, with no obvious outstanding strengths or weaknesses.

3. The assessment of transformational leadership styles is not influenced by teacher profiles and is not an important factor in the assessment of transformational leadership.

The assessment of leadership styles depends more on the actual performance and behavior of the leader than on being influenced by sex, age, qualifications, and teaching experience.

4. Teachers did not show significantly outstanding levels of creativity, innovative practices, and innovative diversity. Teachers do not have significant strengths or weaknesses in innovative behaviors. Innovation is a complex process that is influenced by many aspects, such as individuals, organizations, and the environment.

5. Teachers' creative behavior is not affected by teachers' sex, age, education, or teaching experience.

6. There is a significant positive correlation between transformational leadership and innovative behavior. Teachers' innovative behavior is influenced by transformational leadership. Adopting a transformational leadership style has a positive impact on promoting teachers' innovative behavior. This leadership style can stimulate teachers' innovative potential and encourage them to try out

new teaching methods and educational practices, thus improving the quality of teaching and student learning outcomes.

15. Recommendations

Based on the conclusions derived from this study, the following are the recommendations:

1. Establish a culture of innovation. Colleges can actively create an academic culture and educational environment that support innovation. Encourage faculty to share innovative ideas and practical experiences, organize innovative activities and workshops, and make innovation a consensus and value of the college faculty.

2. Provide innovation training and development. Provide innovative training courses and professional development opportunities for teachers to help them enhance their innovative awareness and abilities. Training must include innovative thinking methods, instructional design innovations, and technology education applications.

3. Promote transformational leadership styles for leaders. Encourage college leaders to adopt transformational leadership styles to stimulate teachers' innovative potential. Leaders should be role models of innovation, provide support and resources for teachers, and make innovation a common pursuit throughout the college.

4. Innovation program support. The college should set up an innovation project fund to subsidize teachers' innovative research and practice projects. This will motivate teachers to actively participate in innovative activities and promote continuous innovation in teaching methods and educational practices.

5. Encourage interdisciplinary cooperation. Promote cooperation between different disciplines and build an interdisciplinary innovation platform so that teachers can communicate and inspire each other in a diverse environment, thus generating more innovative ideas.

6. Sharing and recognition of innovative achievements. Faculties should organize regular innovation achievement demonstrations and sharing activities to provide recognition and rewards for teachers with outstanding performances. This will enhance teachers' motivation and drive more teachers to participate in innovative behaviors.

7. Long-term tracking and evaluation. It is recommended that while implementing the above measures, the college conduct long-term tracking and evaluation to keep abreast of the effectiveness and impact of the innovation program. Continuous optimization and improvement will be carried out according to the assessment results to ensure the continuous development and enhancement of innovative behaviors.

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