LEADERSHIP AND CREATVITY

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Abstract : Although research studies have indicated that transformational leadership style is related to creativity, relatively limited researches have attempted to determine the moderating effect of training on the relationship between transformational leadership and creativity. Data were collected from 110 postgraduate students at the Faculty of Education. In this study, Moderated Multiple Regression analysis was used to test hypothesis and theoretical model. Findings of this study indicated that training factor (untrained students vs. trained students) significantly affected the relationship between transformational leadership and creativity. It is suggested that supervisors should engage in transformational leadership behaviors in order to enhance the creative performance of their students. Also, creativity training program should be provided for students to learn creativity knowledge, attitudes, workplace idea generation and idea implementation.

Keywords: *Transformational leadership, creativity, training, moderated multiple regression*

INTRODUCTION

Creativity is a critical factor to the success and competitive advantage of educational organizations (Gumusluoglu & Ilsev, 2009). Innovation and global competition has motivated educational organizations to exert creativity to improve students and increase efficiency and effectiveness of their organizations. Many researchers believed that leadership is the significant factor in creating creativity in organization (Mumford, Scott, Gaddis, & Strange, 2002; Shin & Zhou, 2003). One of the styles of leadership that can facilitate the generating and implementing new ideas within organization is transformational leadership style (Andriopoulos & Lowe, 2000). Also, Scott, Leritz and Mumford (2004) emphasized that training can enhance creativity. It would seem that training may have an impact on the relationship between leadership and creativity. However, limited studies have been conducted regarding the moderation role of training on the relationship between transformational and students' creativity. So, in this paper, we are interested to investigate the effect of transformational leadership behaviours of supervisors on students' creativity. Training (types of training: trained/ untrained students) is hypothesized as a moderator variable in an effort to understand which are the group of students for whom the effect of transformational leadership on creativity obtained by the students is stronger. This article will provide some preliminary findings of a study currently being conducted in Malaysian research universities. The remainder of this article is organized as follows. In Section 2, we introduce the relevant literature; Section 3 describes methodology and is followed by presentation of the findings. Finally, we describe a summary and discussion for future research.

LEADERSHIP AND CREATIVITY

According to Gumusluoglu and Ilsev (2009) "creativity is the production of novel and useful ideas" (p. 461). It is an important factor for organizations' survival and competitiveness (Gong, Huang & Farh, 2009). Also, it has significant impact students' performance. Some research studies have reported that students' creativity will be flourished when their lecturer or supervisor displays transformational leadership behaviours (Gong, Huang & Farh, 2009). Transformational leaders create changes within organizations. It refers to the process whereby a leader engages with his followers and creates a connection that raises the level of motivation and morality in both himself and his followers (Northouse, 2009, p. 131). In fact, this type of leadership is becoming more and more important to organizations, as workforces become more diverse, technology improves and international competition heightens (Afshari et al., 2010). In 2009, Gumusluoglu and Ilsew conducted a study on transformational leadership and creativity and found that "transformational leadership behaviors closely match the determinants of innovation and creativity at the workplace, some of which are vision, support for innovation, autonomy, encouragement, recognition, and challenge" (P.462). In fact, these behaviors are as instrumental for promoting creativity (Sosik, Kahai, & Avolio, 1998). Similarly, Gong et al. (2009) found that transformational leadership style of managers was positively related to employees' creativity. Moreover, Dvir and his colleagues (2002) conducted a study on impact of transformational leadership on follower development and found that there is a significant relationship between transformational leadership role of teachers and students' empowerment. In fact, students under transformational leadership are encouraged to seek creative approaches in completing their tasks and feel empowered. Empowerment is a source of creativity. People who are empowered can show creative behavior (Jung, et al., 2003). According to Gumusluoglu and Ilsev (2009), "transformational leaders, by individualized consideration, can enhance self-confidence of their followers and heighten personal development that leads to follower empowerment" (p.463). Transformational leader can establish a pleasant environment and stimulate followers to be creative and innovative. Also, "they can encourage followers to try new approaches and develop innovative ways of dealing with organizational issues" (Northouse, 2009, p. 142). Furthermore, theses leaders by "intellectually stimulating their followers, championing innovation, and articulating a compelling vision throughout their organizations, help establish an organizational climate where employees feel challenged and energized to seek innovative approaches in their jobs" (Koene, Vogelaar, & Soeters, 2002 cited in Gumusluoglu & Ilsev, 2009). It would seem that teachers who act as transformational leaders can create an open, flexible, unconventional, and student-centered environment (Andiliou & Murphy, 2010). In such environment, personality characteristics, thinking styles, knowledge, and skills needed for creative thinking will be developed (Andiliou & Murphy, 2010).

TRAINING AND CREATIVITY

A number of studies indicated that training can foster creativity. The traditional belief is that creative people are geniuses, working on creative endeavours in isolation from the rest of the world. Andriopoulos and Dawson (2009) believed that everyone can be creative so training should be provided for individuals to understand the process of creativity In fact, 'through education and training the innate creative ability of individuals can be stimulated and nourished' (Rose and Lin, 1992:131). This is supported by De Bono (2004) who studied on creativity training programs and found that training of a creative thinking process can enhance creativity.Amabile (2001) introduced Componential model for creativity as a way of training creativity. According to this model, individuals' cognitive abilities (mental flexibility, remote associations, suspension of judgement, and originality of thinking), personality traits (risk taking, self-confidence, need for achievement, autonomy), knowledge and motivation to innovate will be fostered. Moreover, Cave (1999) introduced two different approaches for training creativity: 1) to motivate and inspire students in order to be creative; 2) to teach them the cognitive techniques to generate new ideas. Furthermore, Basadur, Runco and Vega (2000) reported that creativity training enhanced generating more, higher-quality and more original ideas. It would seem that educational institutions should invest substantial time and resources and provide training programs for staff to learn creativity knowledge, attitudes, workplace idea generation and idea implementation (Birdi, 2005).

METHODOLOGY
The moderating effect of training between transformational leadership and creativity was analyzed using moderated multiple regression (MMR) analysis. First, preliminary analyses such as normality, linearity, homoscedasticity, and homogeneity of error variance were tested before running the MMR analysis.
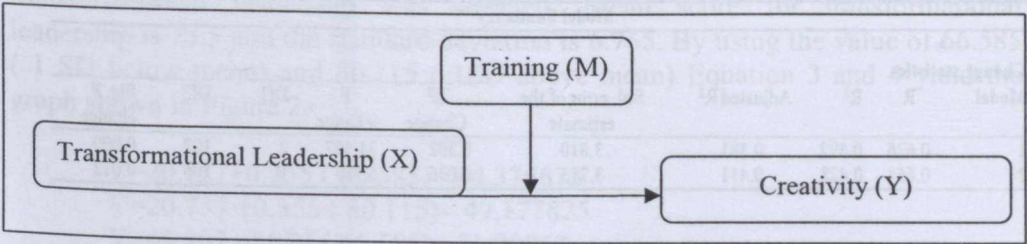
Training (M)

Transformational Leadership (X)

Creativity (Y)

Figure1. Simple research framework

In order to represent the variables in the ordinary least-square (OLS) model, the equation one was used. Equation 1 (OLS model): $Y = \beta0 + \beta1\,X + \beta2\,Z + e$. Also, equation was used to compare the OLS model with the MMR model to identify the presence of moderating effect.

Equation 2 (MMR model): $Y = \beta0 + \beta1\,X + \beta2\,Z + \beta3\,X*Z + e$. "Where Y= creativity, X= transformational leadership, Z= training , $X*Z$= the product between the predictors transformational leadership and training (TL * Training), $\beta0$= the intercept of the line-of-best-of-fit which represents the value of y when $X=0$, $\beta1$ = the least-squares estimate of the population regression coefficient for X, $\beta2$= the least-squares estimate of the population regression coefficient for Z, $\beta3$= the sample- base least-squares estimates of the population regression coefficient for the product term, and e= the error term" (Aguinis, 2004, p.178). Quantitative data were gathered through a set of questionnaire. Transformational leadership style was measured by the Multifactor Leadership Questionnaire. It consists of 20 items. Also, creativity consists of 13 items measuring students' creativity. The moderator variable (training) was measured based on nominal scale (trained students and untrained students). Face and content validity of these instruments were established by a panel of experts. Feedback from the panel of experts was used to ensure that these scales measure the content areas of investigation and are culturally and technically appropriate for the context of the study. In addition, Cronbach's alpha was used to measure internal consistency and calculated via the SPSS 18 statistical package. Cronbach's alpha is the most common form of internal consistency reliability coefficient. The Cronbach's alpha coefficients for these scales were: transformational leadership style = .913 and creativity= .85.

Table 1.
Model summary

			Model Summary						
Change statistics									
Model	R	R^2	Adjusted R^2	Std. error of the estimate	R^2 Change	F change	Df1	Df2	Sig. F change
1	0.626	0.392	0.381	3.810	0.392	34.507	2	107	0.000
2	0.654	0.428	0.411	3.715	0.036	6.585	1	106	0.012

According to Model 1 of the result of MMR analysis, R= 0.626, R2= 0.392, F (2, 107) = 34.507, and P=0.0001. This result shows that 39.2% (R2= 0.392) of the variance in creativity is explained by transformational leadership style and training (Table 1). Moreover, based on Table 2, the regression equation for model 1 can be written. Equation 1: Creativity = 31.304 + 0.208 transformational leadership + 4.769 training. The regression equation1 shows that for every one unit increase in transformational leadership, the level of creativity will increase by 0.208 units and for every one unit increase in training, the level of creativity will increase by 4.769 units.

Model 2 indicates the results after the product term (TL*Training) was included in the equation. As can be seen from Table 1, the addition of the product term resulted in an R2 change of 0.036, [F (1, 106) =6.585, P<0.05]. The results support for the presence of a moderating effect. In other word, the moderating effect of training explains 36% of variance in creativity increase above and beyond the variance explained by transformational leadership scores and training. So, it can be concluded that the hypothesis is supported.The equation for model 2 is as follows:
Equation 2: creativity= 20.737 + 0.355 transformational leadership + 25.070 Training – 0.277 TL*training. In fact, dummy coding system was used to code the binary moderated. The equation above shows that there is -0.277 differences between the slop of creativity increase on transformational leadership between untrained students (coded as 0) and the trained students (coded as 1). In other words, the slop regression creativity on transformational leadership is less steep for untrained students as compared to trained students.

Predicted Creativity = 20.737 + 0.355 transformational leadership + 25.070 Training – 0.277 TL*training

Predicted Creativity = 20.737 + 0.355 transformational leadership + 25.070 (0) – 0.277 (0)

Equation 3 : untrained students predicted creativity = 20.737 + 0.355 transformational leadership

Predicted creativity =20.737 + 0.355 transformational leadership + 25.070 Training – 0.277 TL*training

Predicted creativity = 20.737 + 0.355 transformational leadership + 25.070 (1) – 0.277 (1)

Equation 4 :trained students predicted creativity = 45.807+0.078 transformational leadership

Also, value of 1 standard deviation (SD) above and below the mean for transformational leadership was selected. Mean score for transformational leadership is 73.5 and the standard deviation is 6.765. By using the value of 66.585 (1 SD below mean) and 80.115 (1SD above mean) Equation 3 and 4 yield the graph shown in Figure 2:

$$Y=20.737+0.355\ (\ 66.585)= 44.374675$$
$$Y=20.737 +0.355\ (\ 80.115)= 49.177825$$
$$Y=45.807+0.078\ (\ 66.585)= 51.00063$$
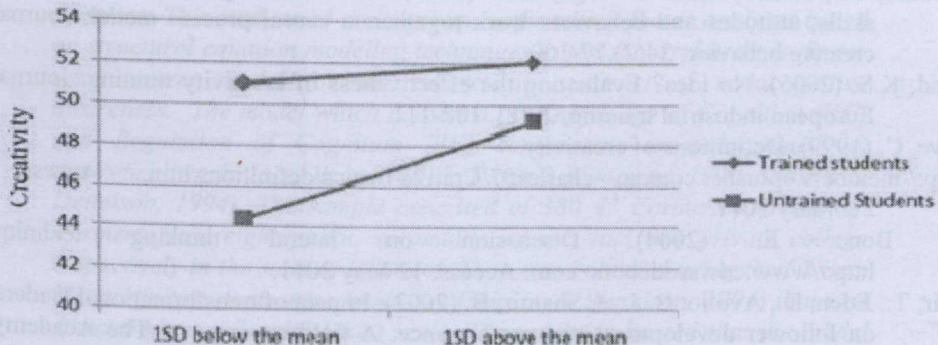$$Y=45.807+0.078\ (\ 80.115)=52.05597$$

Figure 2. Slop for transformational leadership and creativity on training

CONCLUSION

Research studies showed the important role of transformational leadership on creativity. These studies indicated that there is a significant positive relationship between transformational leadership and creativity. However, findings of this study indicated that creativity training play a significant role in moderating the relationship between transformational leadership and creativity. In other words, the relationship between transformational leadership and creativity is stronger for students who attended creativity workshop or training. This might be due to the fact that training can raise each student's creative potential by developing of knowledge, skills and attributes related with creativity. Moreover, this result indicated that students who have attended creative training programs and their supervisors encourage them to be creative through intrinsic motivation, empowerment, and provide supportive climate for innovation; their level of creativity will be higher. It is suggested that supervisors should engage in transformational leadership behaviors (charisma, intellectual stimulation, inspirational motivation, and individual consideration) in order to enhance the creative performance of their students. Also, creativity training program should be provided for students to raise their ability to generate ideas and solve problems.

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