

Investigation of the Strategies to Promote Teachers Creativity through the Educational Principals of Education Department of Razan City of Iran

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ABSTRACT

The objective of the study was investigation of the strategies to promote teachers creativity through the educational principals of Razan Education Department. The study population includes all teachers in the education department of Razan city. Sample of the study consists of 333 teachers, men (210) and women (123). The sample size was determined using table of Krejcie and Morgan and the sample was randomly selected. In order to gather the necessary information related to the objectives, Randsip creativity questionnaire, Rensis Likert's management style questionnaire and the researchers self-developed questionnaire were used. To analyze the collected data, descriptive statistics, regression analysis, t-test and ANOVA test were used. The results of analysis indicated that the manager's performance in some areas, can predict teachers' creativity. The results showed that the autocratic management style negatively and significantly predicts teachers' creativity. While; the consultative and participative styles of management can positively and significantly predict creativity. The results also showed that gender and field of study have effects on teachers' creativity and education variables, work experience, teaching grade did not have any significant effect on the creativity.

KEYWORDS: Teachers Creativity, Principals, Education, Razan

1. INTRODUCTION

As the world we live in is getting more complex, the need to identify and nurture creative minds are getting more and more. That's why the creativity is so important in the education. Hence, innovative and creative principals should be selected in schools to be able to treat wisely and prudently to make ground for the manifestation and appearance of talent and students' creativity. Because, quick-witted, creative people and owners of new ideas as the most precious assets, have very noble and valuable place in the society. It requires human to have creativity and initiative for the vitality and dynamism of life. And the education ministry as the primary custodian of children's training and education has very important tasks. On one hand, it is responsible for providing ground to foster creativity and innovation and on the other hand, is responsible to proper use of the talents and abilities of people which it provides ground to holistic development of the country in the social, cultural, economic, tax areas and so on. In the words, education ministry benefits from the creativity and innovation of the dynamic principals, teachers and students. Therefore, under current conditions, the creativity is one of the most important issues in the realm of scholastic psychology and consequently, innovative and creative managers in different management categories should be chosen. The capable managers who are able to take the necessary measures and procedures particularly in the education system, can provide ground for the manifestation and appearance of talents and teachers and students' creativity. So, creativity and innovation are the secrets of survive and in such circumstances, education isn't merely to improve memory to preserve heritage. Because, nowadays, education is learning creativity and innovation methods. The quality of education in schools is related directly to the education of managers. Noble schools are always administered by creative principals and the sustainability of the school depends on their dynamism and progressiveness. Educational leadership duties should have priority over administrative duties of educational principals. Principals' main responsibility is to create an environment that flourishes teacher's talents to become creative trainer.

RESEARCH REVIEW

Hosseini [1], in his doctoral thesis entitled "Analysis of the nature and ways of nurturing creativity" analyzed the nature of creativity and how it can be fostered. In the study, according to the research objectives, the concept of creative thinking, creativity, various theories about it and the creativity process have been discussed. And he also studied relations between components, factors and barriers of creativity. The results of his research, in tests of 123 high school teachers from different districts of education department in Tehran, have showed that teachers' attitudes toward creativity is low. Teachers also had low scores on each subcategories. According to the results, it can said that the teachers don't have sufficient knowledge about creativity, its fostering process and methods. And if we want to guide our educational system in order to develop creativity, the first step in the plan is to inform teachers about the creativity process.

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Mirhosseini [2], in a study titled "Study and analyze the impact of leadership style on the creativity of the teachers, regarding Teacher Training Centers teachers' points of view" concluded that participative style of leadership is the most effective in which the principals along with creating friendly relations with teachers utilize their opinions in the participative management decision making.

The results obtained in the Seif [3] study entitled "determine factors and relationship between creativity and career success of sport coaches in Nahavand city" confirmed that:

1. There is a significant correlation between creativity and career success.
2. There is a significant correlation between age and creativity value of sports coaches.
3. There is a significant correlation between the academic degree and creativity value of sports coaches.
4. There is a significant correlation between academic discipline and creativity value of sports coaches.
5. There is a significant correlation between the age group and creativity of sports coaches.
6. There is a significant correlation between the academic degree and creativity of sport coaches.
7. There is a significant correlation between the academic discipline and creativity of sport coaches.

Amabile [4] conducted 12 studies over 12 years and found that intrinsic motivation is the most important in creativity. If people are interested in work from beginning and enter the job with joy and satisfaction, not by external pressure, can show more creativity.

Research on the life of famous writers like John Irving, Dickens, scientists such as Einstein, Curie, artists like Mozart, Picasso and other celebrities such as Margaret Mead and Watson revealed the importance of intrinsic motivation. For instance, John Irving says: "... Here, an unspoken factor is love. The reason I work hard is, I don't think it as my job but I consider it as my desire and goal."

Crutchfield [5] believes that intrinsic motivation rather than extrinsic motivations leads to higher levels of creativity. Crutchfield's research showed that valuable work of creative individuals has been associated with intrinsic motivation. Lepper [6] stated, people who have intrinsic motivation unlike those have extrinsic motivation risk more easily. Deci and Ryan [7] said: "When people are internally motivated, they search their interested situations that requires the use of creativity and all of their abilities."

Rogers [8] has particular attention to the relationship between creativity and mental health. He believes, there is a positive correlation between creativity and healthy personality. Maslow [9] also stated: "The concept of mental health and creativity not only are close but also, similar." Barron and Harrington [10] also say: "Some studies indicate that creative people have certain traits of character, such as most of them want to be independent, have high self-acceptance, high energy and broad intuitive thoughts." And Getzels and Jackson [11] in their empirical studies have found that creative people have more incentives and are less assertive.

Amabile *et al.* [12] in interview including 120 scientists in 20 different disciplines have reached the conclusion that environmental factors are dominant factors in the development of their creativity. In another study Hennessey and Amabile [13] have come to the conclusion that social and environmental factors play major roles in creative work and they add "we found a strong relationship between personal motivations and creativity which a large part of this tendency is determined by social environment, or at least certain aspects of the environment" (Quoted in *ibid.*).

Research evidences show middle ages as ultimate extent of creativity evolution. Pirkhaefi [14] asserts that for emergence and flourishing of creativity, simultaneously occurrence of intrinsic and extrinsic motivation are needed; a creative idea through a strong desire and spontaneously motivation lead to a product and perhaps be accepted and even admired by the others. Ryan in *Art of Thinking book* following the concluding scholars' comments in psychology says "Creativity expresses the individual's mental health which is associated with honesty, sense of unity and integrity, increased motivation, commitment to own and the others and feel perfection". Torrance and Goff [15] concluded in a study in individuals with IQ less than 120, intelligence and creativity may be correlated, however, there is not such a correlation in who have IQ above 120. Barron and Harrington [10] have shown, creative people who offer several ways to solve the problems naturally have a higher IQ.

Geil [16] with an aesthetic expression has claimed that creative people need a leader who is creative. He believes creativity of the principal is essential to nurture creative staff and students. He has placed greater emphasis on the empowering of organizational members. He suggests that if knowledge is power, so the means of empowering people is sharing them with the knowledge. The Management who gives their colleagues and students' knowledge, information and ideas. it makes their minds effortful and provides the ground for creativity.

Recent research of Bowden and Jung-Beeman [17], Torrance [18] and Parnes [19] have shown that creativity is observed in all group and individual activities of human, and with varying degrees of intensity potentially and foster able exist in all humans. Gordon [20] released ten -year results of his study about creative individuals in which stated that the human mind when expresses creativity and innovation is in a particular psycho. If that state can be established, creativity is produced. He, in creativity creating groups, encouraged members to an imaginary circulation by applying an allegorical and metaphor process and in the case, he was discovering innovative thoughts and ideas.

Research of Schubert [21] also shows that creative people because of their better morality and thoughts and the ability to produce solutions had better mental and physical condition than non-creative people.

Meichenbaum [22] in order to help people whom exposed to stress to cope with stress introduced inoculation techniques. Inoculation techniques training against stress has three distinct steps; perception step, training

and practice step and application and follow-up step. In this regard, the Meichenbaum's research confirms that to cope with stress can make people intrinsically creative and active to be able to deal with different situations.

Huey and Rank [23] believe, when a healthy school environment exists, teachers Morales is high, teachers are feeling good about each other and yet have a perception of their situation in the work. So, healthy environment and high teacher morale are related. And principals' ability to create a positive environment and culture in the school can affect teacher moral.

A. The overall objectives of the research:

Discuss strategies to promote creativity of teachers via educational principals.

B. Partial objectives:

1. Identification of providing school facilities and equipment by principals on teachers' creativity.
2. Identifying the role of taking teachers' opinions and comments on various issues through active principals on their creativity.
3. Identifying the role of encouraging teachers to do tests and applying new methods by the principals of their creativity.
4. Investigating the impact of social, cultural and economic strengthening of teachers by principals on the creativity of the teachers.
5. Investigating the effect of making educational laws and principles more flexible by principals on the creativity of the teachers.
6. Identify the role of providing a creative atmosphere in educational institutions through principals and its influence on the creativity of teachers.
7. The effect of leadership style of principals on teachers' creativity.

In the study, performances and management styles of educational principals as independent variable and creativity of teachers as the dependent variable are considered. Also, gender, work experience, educational degree and discipline of teachers have been considered as moderating variables.

2. MATERIALS AND METHODS

In the study a questionnaire is used to evaluate the existing status, therefore, due to psychology, the methodology is descriptive and correlational. The statistical population are all of teachers working in Razan city education department which consists of male and female teachers in primary schools, middle schools and high schools .The total number of teachers in Razan city education department education is 452, including 130 primary school teachers, 142 middle school teachers and 180 high school teachers.

Sample and sampling method

In the present study, according to the table proposed by Krejcie and Morgan [24] and respect to the total number of items in the both scales (80 items), 323 people were considered as the sample size. The sample size to increase sureness about the generalizability power and reduce the possibility of sampling error, was increased to 330 people. A point that should be mentioned here is that, as noted above, the number of teachers was 452 people in Razan city in year 2008-2009 and according to Krejcie and Morgan [24] table, 210 number of cases is adequate for the population. However, there was an attempt in the present study to select a more representative sample within the research community, also teachers from elementary, middle and high schools are involved in research, and sample includes larger number of people. The number of subjects required for each of the three elementary, junior high and high school, the number of each of these three groups were selected. The sampling procedure was as follows: First, the number of teachers from elementary, middle and high schools was determined; then based on Krejcie and Morgan table [24], 97, 103 and 123 subjects were considered respectively. In order to reduce errors and prevent possible loss of sample because of various reasons such as being flawed in some questionnaires, more samples were considered. Then for the sample selection, the list of Razan city teachers was prepared by the Department of Education. And for each member in the list, which separately was belonging to three elementary, middle and high schools, a numerical code was considered. Then, the sample was randomly selected from the coded list by the researcher. It is worth mentioning that the sample size after removing the confounding observations were 333 included 101, 107 and 125 participants for three elementary, middle and high schools, respectively. The sample according to the study field, gender and the overall is presented in Table 1.

Table 1. Distribution of the sample according to gender and educational groups

| Gender/ School | Elementary | Middle | High | Total |
|----------------|------------|--------|------|-------|
| Male | 70 | 66 | 74 | 210 |
| Female | 31 | 41 | 51 | 123 |
| Sum | 110 | 107 | 125 | 333 |
| Total | | | 333 | |

In the present study, in order to gather the required information related to the research questions, three questionnaires Randsip creativity questionnaire, Rensis Likert's management style questionnaire and the

researchers self-developed questionnaire, to measure managers' performance in some areas, were used. In addition to the questionnaires, some demographic and peripheral information such as; educational degree, educational grade that the teachers are teaching (elementary, middle and high school), teaching experience, field of study and sex were received from the participants by adding some questions to the beginning of questionnaires.

Randsip creativity questionnaire

Randsip creativity questionnaire to measure an individual's level of creativity was innovated and standardized by Randsip; and in 1979 was published in the personnel journal. Randsip (1979; quoted by Moghimi, [25]) states that, in recent years, several tests have been developed for measuring creative abilities and behaviors while each of them per se, is useful but they are not cover sufficiently complex network of behaviors and especially characteristics such as attitudes, motivation, values, interests, and other variables that prepares individuals for creative thinking. Therefore, the questionnaire has been developed to cover more innovatively features as a standard. Randsip creativity questionnaire consisted of 50 questions, each question is graded a Likert scale of five values. That can cover ranges from completely disagree = 1, disagree = 2, Neutral= 3, agree = 4 and strongly agree = 5.

Ivancevich and Matteson [26] in the Management and organizational behavior book in the chapter called "Decision" have been reported Randsip Creativity Questionnaire as a perfect tool to measure creativity in organizations with desirable reliability and validity. Except for questions 4 and 39, the factorial load of 50 questions are between 0.30 and 0.58. To evaluate the reliability of the questionnaire, the Cronbach's Alpha method was used and the calculated coefficient was equal to 0.74 which indicating good reliability of the questionnaire.

Randsip's management style questionnaire

Management Style Questionnaire of Likert [27] was prepared and regulated by Cheshmi [28]. This questionnaire is designed based on Likert's definition for management style. The questionnaire consisted of 12 questions and each three questions assesses a different management style. In total, the questionnaires measures four management styles, autocratic, paternalistic (Benevolent), consultative and participative. According to Cheshmi [28], factor analysis of the questionnaire showed good validity of the questionnaire. Cronbach's alpha coefficients for the four management styles for autocratic, paternalistic, consultative and participative are 0.81, 0.73, 0.78 and 0.68. In the present study, confirmatory factor analysis was used to confirm validity and construct validity of management styles questionnaire. KMO index was 0.80 and the numeric value of index in the Bartlett's test of sphericity equals 1219.287 which was significant in the 0.0001 level. These were indicating sampling adequacy for factor analysis of selected variables. According to analysis carried out on 12 test items, and for criterion of eigenvalues greater than one and Scree plot slope of four factors, it was confirmed. The present study measured the stability (reliability) of management styles questionnaires via Cronbach's Alpha for each of the styles of management autocratic, paternalistic, consultative and participative as 0.76, 0.61, 0.80, 0.83, respectively.

The researcher's self-developed questionnaire related to the functions of the manager

In the study, in order to assess questions 1 to 6 that are associated with the manager performance a questionnaire was designed. According to the existing theories about management, management performance related concepts and with refer to the questionnaires in relation to management a total of 30 questions were selected. And against each question a scale consisting 5 items (very low, low, medium, high, and very high) was placed. Then the questions were presented to three faculty members from the field of educational administration and psychology. The questionnaire also assessed in terms of intelligibility and uncertainty by conducting on 33 teachers. As a result of the survey, at this stage, 12-question of the questionnaire were eliminated and a three-question cluster for each of the six research questions were selected, and a questionnaire consisting of 18 questions was prepared. Examples of questions in this questionnaire for each cluster were as follows: Cluster 1 (the principal always gives importance to quality and quantity of school and educational facilities), Cluster 2 (When a subject is discussed principal gives voice to all people), Cluster 3 (to solve education and training problems principal encourages students, teachers to do research), Cluster 4 (our principal believes that the payment of salaries, wages and job security is essential for improving the performance of teachers), Cluster 5 (when a problem occurs the principal to resolve it will accept any appropriate proposals, even if he doesn't like it), Cluster 6 (our school has such a good atmosphere whenever I encounter a problem in my work I can easily share my issue with the principal). In order to assess the reliability of these six clusters, Cronbach's alpha coefficient was calculated. The obtained coefficients for these six clusters, 0.79, 0.85, 0.82, 0.79, 0.84 and 0.72, respectively.

Data collection and data analysis

Questionnaire conducting procedure was self-completion. Before presenting the questionnaire explanations about how to respond the questions, the research aims and the necessity of sincere cooperation of the subjects (respected teachers) was presented. In addition, the subjects were assured that their responses would be confidential. The subjects completed initially demographic questionnaire, creativity questionnaire, management style questionnaire and finally the questionnaire which was prepared by the researcher. During filling in, participants were asked to avoid any item unanswered. After gathering questionnaires grading work were

performed. After scoring questionnaires and clarifying participants' scores, correlating and summarizing data were done using statistical software SPSS 11.5.

3. RESULTS

To study the variables' descriptive data and provide a clearer picture of the status of the variables examined in this study before addressing the findings related to the research questions, some of the research's descriptive indicators are presented. To evaluate the descriptive data of variables in Table 2 descriptive indicators, data on the mean, standard deviation of management styles variables, management performance (in the 6 clusters) and creativity of sample group in terms of gender are presented.

In Table 3 descriptive indicators, data on the mean, standard deviation of management styles variables, management performance (in the 6 clusters) and creativity of sample group in terms of teaching group (elementary, middle and high schools) are presented.

Table 2. The mean and standard deviation of variables according to gender and generally

| Groups | Women (n=123) | | Men (n=210) | | General (n=333) | |
|-----------------------------------|---------------|-------|-------------|-------|-----------------|-------|
| | M | SD | M | SD | M | SD |
| Indicators Variables | | | | | | |
| autocratic management style | 8.4 | 2.93 | 8.5 | 2.52 | 8.5 | 2.67 |
| Benevolent management style | 9.67 | 2.39 | 8.97 | 2.06 | 9.23 | 2.21 |
| consultative management style | 10.33 | 2.76 | 9.96 | 2.59 | 10.1 | 2.66 |
| participative management style | 10.85 | 3.03 | 10.27 | 2.74 | 10.49 | 2.87 |
| principal performance (cluster 1) | 10.11 | 2.98 | 9.73 | 2.78 | 9.87 | 2.86 |
| principal performance (cluster 2) | 10.91 | 2.87 | 10.65 | 2.8 | 10.75 | 2.83 |
| principal performance (cluster 3) | 9.97 | 3.1 | 9.75 | 2.89 | 9.83 | 2.96 |
| principal performance (cluster 4) | 10.75 | 3.02 | 11.15 | 2.46 | 11 | 2.68 |
| principal performance (cluster 5) | 9.93 | 3.17 | 9.67 | 2.64 | 9.77 | 2.85 |
| principal performance (cluster 6) | 10.61 | 2.95 | 10 | 2.69 | 10.23 | 2.8 |
| Creativity | 187.08 | 16.61 | 178.04 | 15.41 | 181.38 | 16.43 |

Table 3. The mean and standard deviation of variables based on teaching group (elementary, middle and high school)

| Groups | Elementary school (n=101) | | Middle school (n=107) | | High school (n=125) | |
|-----------------------------------|---------------------------|-------|-----------------------|-------|---------------------|-------|
| | M | SD | M | SD | M | SD |
| Indicators Variables | | | | | | |
| autocratic management style | 8.44 | 2.59 | 8.40 | 3.13 | 8.62 | 2.31 |
| Benevolent management style | 9.09 | 2.35 | 9.27 | 2.42 | 9.30 | 1.89 |
| consultative management style | 9.85 | 2.72 | 10.68 | 2.65 | 9.80 | 2.56 |
| participative management style | 10.36 | 2.81 | 11.26 | 2.58 | 9.93 | 3.009 |
| principal performance (cluster 1) | 9.76 | 2.7 | 10.34 | 3.24 | 9.56 | 2.6 |
| principal performance (cluster 2) | 10.47 | 22.92 | 11.47 | 2.68 | 10.35 | 2.79 |
| principal performance (cluster 3) | 9.42 | 3.15 | 10.46 | 2.99 | 9.63 | 2.69 |
| principal performance (cluster 4) | 10.71 | 2.75 | 11.21 | 2.78 | 11.06 | 2.53 |
| principal performance (cluster 5) | 10.73 | 2.79 | 10.35 | 2.95 | 9.30 | 2.74 |
| principal performance (cluster 6) | 10.17 | 2.80 | 10.89 | 2.58 | 9.70 | 2.88 |
| principal performance (cluster 6) | 182.44 | 16.64 | 182.68 | 15.83 | 179.41 | 16.69 |
| Creativity | 8.44 | 2.59 | 8.40 | 3.13 | 8.62 | 2.31 |

Correlation matrix of variables

In order to reveal the primary relationships and correlation between the variables in the study, simple correlation between all variables were calculated. In Table 3, the correlation matrix of variables is given. As the results show there is a significant correlation between some variables and in between some of the variables, there is no correlation. As an example, there are significant correlations between four styles of management and principals' performance (in 6 clusters or domains).

Analysis and examine research questions

In order to investigate the research questions, the collected data were analyzed using statistical methods. Therefore, the simultaneous multiple regression analysis method was used to examine the questions. To investigate the moderator effect of variables including academic degree (Diploma, Associate Degree, Bachelor, Masters and above), teaching stage (elementary, middle or high school), teaching experience (1 to 5 years, 5 to 15 years, 15 to 20 years and 25 to 30 years) and academic field and group (social science, mathematics and physics and experimental science) the one-way ANOVA test was used. T test was used for comparison of independent groups. To investigate the moderator effect of gender in relation to creativity.

The first question of the present study was; does school facilities and equipment affect the creativity of teachers? As already mentioned, in order to implement and analysis of this question and the second to sixth questions, some questions were designed. For each of the six questions, a cluster containing three valid and reliable sentences was considered. In the analysis, the relationship between creativity and each of these clusters

was statistically analyzed. The method used in the analysis was a multiple regression analysis. Its goal was to predict the dependent variable (criterion) by the independent variable (predictor). Table 4, presents the results of 1st research question analysis.

Table 4. Regression of creativity on principal's performance in cluster 1

| Predictor Variables | Creativity | | | | |
|-------------------------------------|------------|----------------|------|------|-----|
| | R | R ² | B | β | P |
| principal's performance (cluster 1) | 0.09 | 0.007 | 0.56 | 0.10 | N.S |

As shown in Table 4, principal's performance in relation to the provision of school facilities and equipment, is not able to predict the creativity of teachers ($p=N.S$, $\beta=0.10$). i.e., the principal's performance in this regard does not have any firm determination contribution in the prediction of teachers' creativity.

To investigate the second research question regarding "does giving teachers the opportunity to express their opinions and comments on various issues on their carriers by principals have any impact on their creativity?" the simultaneous multiple regression method was used. The results of the analysis is presented in Table 5.

Table 5. Regression of creativity on principal's performance in cluster 2

| Predictor Variables | Creativity | | | | |
|-------------------------------------|------------|----------------|------|------|-------|
| | R | R ² | B | β | P |
| principal's performance (cluster 2) | 0.16 | 0.023 | 0.93 | 0.16 | 0.003 |

As shown in Table 5, principal's performance on giving opportunity to teachers to express their opinions, positively and significantly ($P\leq 0.003$, $\beta=0.16$), predicts the creativity of teachers. In fact, for every one-unit change in the principal's performance there is 0.16 unit change in the teachers' creativity. It means teachers whose principles gave them opportunity to express their opinion have higher creativity.

The third question of the study was "does encouraging teachers to experiment and implement new methods through educational principals have influence in their creativity?" For analysis the question, regression method was applied. The results are presented in table 6.

Table 6. Regression of creativity on performance of principal in cluster 3

| Predictor Variables | Creativity | | | | |
|-------------------------------------|------------|----------------|------|------|-----|
| | R | R ² | B | β | P |
| principal's performance (cluster 2) | 0.08 | 0.003 | 0.45 | 0.08 | N.S |

The results of Table 6 show that principal's performance in encouraging teachers to examine and apply new methods, cannot predict the creativity of teachers ($P=NS$, $\beta=0.80$). It means that principal's performance in encouraging teachers to examine and apply new techniques does not have significant share in prediction of teachers' creativity.

In the considering the fourth research question, "Does strengthening teachers' social and, cultural positions through principals have any prominent effect on their creativity?" the regression analysis was used. The results are illustrated in Table 7.

Table 7. Regression of creativity on performance of principal in cluster 4

| Predictor Variables | Creativity | | | | |
|-------------------------------------|------------|----------------|------|------|-----|
| | R | R ² | B | β | P |
| Principal's performance (cluster 4) | 0.07 | 0.005 | 0.43 | 0.07 | N.S |

The results presented in Table 7, indicate that improving the social, cultural positions of teachers does not have ability to predict their creativity ($P=NS$, $\beta=0.07$). Strengthening teachers socially and culturally is not a determinant predictor of teachers' creativity.

The fifth question in this study was "Does making educational principles more flexible through the educational principals have effect on the creativity of teachers?" and for its investigation, regression analysis test was used. The results of the analysis are given in Table 8.

Table 8. Regression of creativity on performance of principal in cluster 5

| Predictor Variables | Creativity | | | | |
|-------------------------------------|------------|----------------|------|------|--------|
| | R | R ² | B | β | P |
| Principal's performance (cluster 5) | 0.21 | 0.04 | 1.24 | 0.22 | 0.0001 |

As shown in Table 8, the principals' performance in making educational principles more flexible can predict the teachers' creativity. Principal's performance on making educational principles has positively and significantly ($P\leq 0.0001$, $\beta=0.22$), predicts the creativity of teachers. In fact, for every one-unit change in the

Principal's performance, there is 0.22 change in the teachers' creativity. On the other hand, teachers whose principals act on making principles more flexible, have higher creativity.

The present study investigated the sixth question regarding "does establishing creative atmosphere in educational centers through principals have impact on creativity of teachers?" using regression analysis. The results of this analysis in Table 9, is presented.

Table 9. Regression of creativity on performance of principal in cluster 6

| Predictor Variables | Criterion Variable | | | | |
|--|--------------------|----------------|------|------|--------|
| | Creativity | | | | |
| | R | R ² | B | β | P |
| Principal's performance (cluster 6) | 0.34 | 0.11 | 1.98 | 0.34 | 0.0001 |

The results of Table 9 indicate that creativity of teachers can be predicted by the principal's performance in creating creative atmosphere in the educational institutions. This means that performance of principal in creating a creative atmosphere in the educational institutions, positively and significantly ($P < 0.0001$, $\beta = 0.34$), predicts the creativity of teachers. In fact, for every one-unit change in the principal's performance, 0.34 change occurs in the teachers' creativity. Teachers whose principal involved in the attempt to create a creative atmosphere in learning centers have higher creativity.

The seventh research question regarding "does leadership styles affect the creativity of teachers?" was analyzed using the simultaneous multiple regression method. The results of creativity regression on the four Likert [27] management styles (Autocratic, benevolent, consultative and participatory management styles) are presented in table 10.

Table 10. Creativity regression on Management Styles

| Predictor Variables | Criterion Variable | | | | |
|---------------------------------------|--------------------|----------------|-------|-------|--------|
| | Creativity | | | | |
| | R | R ² | B | β | P |
| Autocratic management style | 0.51 | 0.26 | -1.64 | -0.26 | 0.0001 |
| Benevolent management style | | | 0.63 | 0.08 | N.S |
| Consultative management style | | | 0.85 | 0.14 | 0.02 |
| Participatory management style | | | 1.76 | 0.3 | 0.0001 |

As shown in Table 10, Management styles including autocratic, consultative and participatory, are able to predict creativity. Autocratic management style (authoritative exploitative) negatively and significantly ($P < 0.0001$, $\beta = -0.26$) predicts creativity of teachers. In fact, per unit change in the autocratic management of principals causes 0.26 change in the teachers' creativity scores. The teachers whose principals' management styles is autocratic, have less creativity. The other results of this analysis indicate that the benevolent management style, cannot predict teachers' creativity. Another finding of this analysis showed consultative management style significantly positively ($P < 0.02$, $\beta = -0.26$) is a predictor of teachers' creativity. In this case, the per unit change in the consultative management style, causes 0.14 of changes in the teachers' creativity. Creativity of teachers that their principals' management styles are consultative is relatively high. Other results indicate that participative management also positively and significantly ($P < 0.0001$, $\beta = 0.30$) predicts teachers' creativity. According to the results and obtained coefficients, in general, the results of this analysis suggest that participative management, is the most powerful predictor for the teacher's creativity. And teachers whose principals' management styles are participative are more creative.

Furthermore, as already mentioned, in order to determine the moderating role of gender t test was used to compare two groups of male and female teachers. The results are presented in Table 11. As shown in Table 11, it is observed that in connection with the comparison of male and female teachers in the aspect of creativity, there is a significant difference ($P \geq 0.0001$, $t < 5.02$). This means that the creativity of female teachers, is significantly higher than male teachers' creativity.

To investigate the moderating role of teachers' level of education (Diploma, associate Degree, Bachelor, Masters or higher) in the field of creativity, one-way ANOVA test was used. The results of this analysis are presented in Table 12. Table 12 shows that educational level of teachers in their creativity does not make a significant difference ($P = NS$, $F = 1.66$).

One of the objectives of the study was to examine the moderating role of teaching group (elementary, middle and high school) on teachers' creativity. To do that one-way ANOVA test was used. The results are displayed in Table 13. As shown in Table 13. One-way analysis of variance showed that teachers in elementary, middle and high schools have no significant differences related to the creativity ($P = NS$, $F = 1.45$).

Another variable which its the moderating role was considered was teachers teaching experience. For analyzing teaching experience effect on creativity one-way ANOVA test was used. The results are presented in Table 14. The results presented in Table 14 indicate that the teachers experience (1 to 5 years, 5 to 10 years, 15 to 20 years, 20 to 25 years, 25 to 30 years) didn't show any significant effect on teacher creativity ($P = NS$, $F = 1.31$). In other words, less experienced, average experienced, relatively high experienced and very senior teachers do not

have significant differences in creativity. To investigate the moderating role of teachers' study field (social science, mathematics & physics and experimental science) in their creativity, one-way ANOVA test was used. The results of this analysis are presented in Table 15.

As it can be seen in Table 15, the results indicate that there is a significant difference ($P \leq 0.04$, $F=30.3$) between the teachers of social science, mathematics & physics and experimental science in the field of creativity. The mean score of three teacher groups are significantly different from each other.

In order to accurately assess differences between groups by Tukey's post hoc test was used. Comparison of paired means by Tukey test showed that teachers whose study field is mathematics & physics significantly are different from teachers in the experimental science field and have higher creativity. The scores of teachers whose study field is mathematics & physics is 14.24 more than experimental science teachers', and this difference is significant in the 0.05 level.

Table 11. T-test to examine gender differences in creativity

| Variables | Group | Number | Mean | SD | t-value | Significance level |
|------------|--------|--------|--------|-------|---------|--------------------|
| Creativity | Male | 210 | 178.04 | 15.41 | 5.02 | 0.0001 |
| | Female | 123 | 187.08 | 16.61 | | |

Table 12. ANOVA test to examine the role of education in creativity

| Variables | N | M | SD | F value | Significance level |
|------------------|-----|--------|-------|---------|--------------------|
| Diploma | 27 | 182.4 | 18.03 | 1.66 | N.S |
| Associate degree | 123 | 182.14 | 15.9 | | |
| Bachelor degree | 162 | 180.76 | 16.43 | | |
| MA and above | 21 | 176.88 | 15.92 | | |

Table 13. Comparing the three groups of teachers from elementary, middle and high school in creativity

| Variables | N | M | SD | F value | Significance level |
|-------------------|-----|--------|-------|---------|--------------------|
| Elementary school | 101 | 182.44 | 16.64 | 1.45 | N.S |
| Middle school | 107 | 179.41 | 15.83 | | |
| High school | 125 | 179.41 | 16.69 | | |

Table 14. One-way ANOVA to examine the role of teachers experience on creativity

| Variables | N | M | SD | F value | Significance level |
|------------------------|-----|--------|-------|---------|--------------------|
| 1-5 Experience Years | 41 | 181.46 | 19.08 | 1.31 | N.S |
| 5-15 Experience Years | 61 | 178.18 | 18.32 | | |
| 15-20 Experience Years | 137 | 181.26 | 15.37 | | |
| 20-25 Experience Years | 51 | 183.27 | 14.21 | | |
| 25-30 Experience Years | 26 | 186.35 | 16.85 | | |

Table 15. One-way ANOVA to examine the role of teachers study field on creativity

| Variables | N | M | SD | F value | Significance level |
|-----------------------|-----|--------|-------|---------|--------------------|
| Social science | 195 | 180.71 | 16.07 | 3.3 | 0.04 |
| Experimental science | 18 | 174.06 | 16.86 | | |
| Mathematics & Physics | 20 | 188.29 | 19.54 | | |

DISCUSSION AND CONCLUSION

According to the study variables and define objectives and also with evaluation of existing theories and studies carried out by the researcher due to circumstances, issues and experiences that happen during training and management practices, and as a student studying in the field of educational administration has faced, Questions and hypotheses were proposed and tested in this study. The questions were:

1. Do School facilities and equipment's affect the creativity of teachers? In answering this question, it should be said that manager performance in relation to providing school facilities is not be able to predict creativity in teachers ($B = 0.10$, $p = NS$) i.e., manager performance does not have any firm share in predicting the creativity of teachers. Researchers in this field have also shown that the challenge leads to creativity. We should consider the fact that the ancillary facilities, are devices that may contribute to creativity. But in the meantime, this feature can perform in the reverse flow of the creativity. So, limiting the people thinking will lead to the suppression of creativity. The fact that managers need to consider in this context is providing pedagogical equipment and facilities in a way that they can provoke the creativity.

2. Does giving teachers the opportunity to express their opinions and comments on various issues by managers in their work, influence their creativity? The answer to this question it should be told that the results of the regression analysis confirmed that the manager performance in providing the opportunity to teachers to express themselves and their opinions can lead to predict the creativity of teachers ($B=0.16$, $p<0.003$). In this context, it seems that the implementation of such a process, does not lead to suppression of creative thinking of teachers and In fact, some of the barriers to creativity are removed as well. On the other hand, this process causes a brainstorming among teachers during the interview with them. And it per se results to creativity. According to the researcher's point of view applying such a process by the manager can creates novel ideas and leads to access unique solutions which helps to fostering both education level and learning.

3. Does encouraging teachers to experiment and implement new methods through educational principles influence the creativity of teachers? The results of regression indicates that the manager performance regarding encouraging teachers to experiment and implement new methods does not have any capability to predict teachers' creativity. ($B=0.08$, $P=NS$).

In explaining these findings it should be noted that, although encouraging teachers by the principal, apparently can lead to teachers creativity, it seems that teachers careful concentration on such demands, is such a covert commitment and teachers do not feel free in applying new techniques without any restriction. Hence, they show less creativity.

4. Does strengthening teachers social-cultural positions through principals affect their creativity? Results of regression analysis confirms that manager performance regarding encouraging teachers' social-cultural positions does not have any capability to predict teachers' creativity ($B = 0.07$, $P = N.S$). The result of the study indicates that there is correlation between motivation and creativity. Related studies by (Amabile and Cheek [29]; Weisberg [30]; Sheikholeslami and Razavieh [31]) have shown that extrinsic motivation is not associated with creativity. Indeed, this intrinsic motivation is a positive and significant predictor of creativity. As strengthening teachers' social, economic and cultural positions is an external encouragement and it can further reinforce extrinsic motivation, as a result, such as incentive can result in creativity.

5. Does making educational regulations and rules flexible through the educational principal effect the creativity of teachers? The results of regression analyses confirms that the principal's performance in terms of making educational regulations and rules flexible is able to predict teachers' creativity. i.e., the principal's performance in terms of making educational regulations and rules flexible positively and significantly predict teachers' creativity. ($B = 0.22$, $P \leq 0.0001$). These findings are in accordance with those who believe, having some kind of freedom in the organization, lead to organizational creativity. It should be noted that although obeying rules is necessary to maintain order and promotion in an organization such as school, the rules should make the principal autonomous to apply his colleagues and his own tastes as well. In fact, it should be considered that the flexibility or lack of flexibility may be a manifestation of the principal characters.

6. Is establishing the creative atmosphere in educational centers through the principals, effective in the creativity of teacher? The results of the regression analysis confirms that the principal performance in terms of making creative atmosphere at the educational centers can predict teachers' creativity. ($B = 0.34$, $P \leq 0.0001$). This finding is in accordance with Faragat [31] result which showed that the schools with free atmosphere, have the higher level of creativity. And is contrary to the Fragat finding [32] which presented that there is a negative relationship between autocratic atmosphere and students' creativity. Education in free atmosphere makes a comfort and accurate atmosphere to teach and students can easily learn the syllabus. Stimulating atmosphere is effective in flourishing the Creative students.

7. Whether the principals' leader style has an impact on teachers' creativity? According to the results of the regression analysis, it can be said that autocratic, consultative and participative management styles are able to predict creativity. This means that autocratic management style is predicted as negative and significant factor of creative teachers ($B = -0.26$, $P < 0.0001$). In fact, for every one-unit change in the principals' autocratic management, teachers' creativity changes 26.0. In addition, the results indicated that benevolent management style is not able to predict the teachers' creativity. Also, the results of this analysis showed that positive and significant ($B = 0.0$, $P < 0.02$) Consultative management style is a predictor of creative teachers. Other results confirm that is also positive and significant participative management style ($B = 0.30$, $P < 0.0001$) predicts teachers' creativity. The results showed that autocratic management style is a significant and negative predictor of creativity. It means that, Teachers with autocratic management style are less creative ones. These finding is in accordance with Shabani study [33] which showed that there is an inverse (negative) relationship between duty-oriented style of principals and teachers' creativity. The results of the study demonstrate that Consultative management style is a positive and significant predictor of teachers' creativity. As, such a style significantly but not completely trusts the subordinates. People are given opportunities to exchange of the information. The findings also indicated that when people are given the opportunity to express their opinions, their creativity blossoms. This finding is parallel with Feizi research [34]. His study showed that creativity of the teachers increases in a range from traditional management style (almost equivalent with benevolent style) forward to moderate style (approximately equivalent with consultative style).

The other findings present that consultative management style not only is the positive- significant but also, the most powerful predictor of teachers' creativity. The finding is in accordance with Feizi [34], Abbas [35] and Mir Hosseini [2] researches. The result, organizational culture is related to creativity, is also consistent with

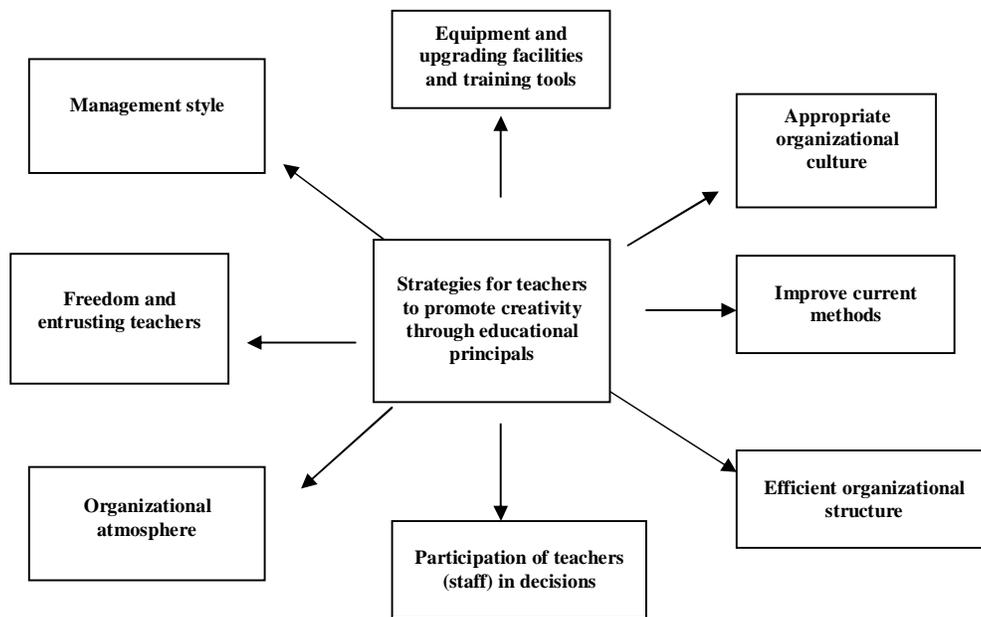
the findings of similar researches [36]. For instance, Woodman researches [37] indicate that, there are significant positive relationships between rational, participatory, supportive and risk taking cultures and creativity and also there are significant negative relationships between hierarchical and bureaucratic cultures and creativity. Tesluk [38] based on his researches, states that an organization's creativity increases as culture of the organization gets closer to the participatory culture, and it decreases as the organization's culture gets closer to the hierarchical culture. Principals, in participative style of management, in addition to establishing friendly relations with teachers use their points of views in taking managerial decisions in a participatory way. Perhaps one of the reasons for the effect of participative management on creativity is that, participative management increases staff satisfaction [39]. And the satisfaction creates favorable condition for development of teachers' creativity. Overall, the results indicate that as school principals utilize centralized decision taking and direct control the creativity of teachers' decreases. On the contrary, as principals use participatory decision-making style, open and mutual communication, relation oriented leadership style, intimate relationship with teachers, decentralized structure and low external control, teachers' creativity rate increases.

Another goal of this study was to investigate the moderating role of gender in the field of creativity. T-test results showed that there were significant differences between the two sexes in the field of creativity. And creativity in female teachers is more than male teachers. These findings are in line with researches of Kim and Michael [40], Bear [41] and are dissimilar to results of Gonen [42], and Sheikholeslami and Razaviyeh [31]. In general, the results of researches in this field are very diverse and conflicting. It seems that external factors are determinant in explaining the results. For instance, relatively high motivation among female teachers may be reason for their high level of creativity. In general, it seems that women worth teaching more than men and show more interest to it. One of the objectives of the study was to examine the moderating role of group teaching (elementary, middle and high school) teachers' creativity. For this purpose, one-way ANOVA test was used. In this case, the results showed no significant relationship. Although, the environment and context in which person is placed is important in creativity. However, it seems, more than anything, the perception of person from the environment in which he is placed, is effective. Creative teachers can actually be present at every academic level.

Another variable which its moderating role in creativity was considered is teaching experience. To investigate the effect of teaching experience on creativity, one-way ANOVA test was used. In this case, the results showed no significant relationship between teaching experience and creativity. These findings are in line with research Shafie Tochani [43] and Abbasi [35]. The finding shows that there is no significant correlation between these two variables. In other words, management experience has not necessarily effect on creative thinking.

To investigate the moderating role of teacher's study field (social science, mathematics & physics and experimental science) on their creativity, one-way ANOVA test was used. The results of the analysis indicated significant differences between mathematics & physics and experimental science groups. The results was counter to Abbasi [35] results. Perhaps the main reason for the difference is that, mathematics & physics field teachers are faced with more problems.

In summary, some strategies for teachers to promote creativity through educational administrators have mentioned.



Recommendations

A: To the managers and staff

1 - It is recommended to school principals to change their management style from autocratic to consultative, participative or similar management practices and patterns and provide ground for nutrition of

creativity in teachers and students. Because, every organization to survive and compete in today's drastically changing world depends on creativity and innovation.

2 - Since, one of the major and effective institutions in development of a healthy society is education ministry, the organization has great importance. In order to create, nurture and manifest creativity in teachers and students, executives and principals are advised to develop creative and joyful environment in schools.

3 - Create a safe and relaxed environment and hire kind, caring and efficient teachers and principals who are aware of the procedures and the use of modern teaching methods are some issues that should be considered by education department.

4 - Senior executives and managers of education department should give authority to school principals for making necessary decisions in order to enable them to practice new ideas of their own or their creative staff in the decision-making of the organization.

5 - Individual decisions and one-way communication from the top down should change to participatory decision making.

6 - Teachers must have the opportunity to express and comment. Managers should listen to comments of teachers and apply useful ones and thereby encourage teachers to give more comments.

7 - Holding in-service training courses for principals and teachers on creativity or innovation using experienced lecturers as well as periodic workshops are recommended.

8 - Credit allocation in developing and strengthening the innovation and creativity and equipping schools with necessary facilities.

9 - Encourage and support creative people by principals, teachers and other supervisors.

10 - Using creative people to manage schools.

11 - Providing software and books about creativity guide, flourish of creativity and creative teaching methods for teachers and principals.

12 - Principals should give special attention to abilities of teachers and attempt to foster and enhance the abilities.

13 - Provide a quiet environment away from the stress in school.

14 - Encouraging teachers to conduct innovative research and present their innovative approaches in education.

15 - Principals should avoid focusing solely on their opinion as the best teaching method for teachers.

To the researchers:

1 - Dear researchers try to conduct similar studies in the bigger population to achieve better conclusions.

2 - The issues which their results in education are incredibly vital and important should be the first choice of researchers.

3 - Researchers similar research using other creativity tests done and the results are compared.

4 - Researchers try to conduct the same research but instead of using questionnaires as the research instrument for measuring creativity and management style, utilize other tools.

5 - It is proposed to generalize results of the research, special attention should be given to the variety of public and samples features in other similar studies.

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