School level Environment and Elementary Teachers’ Self Efficacy: Structural Equation Model

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Abstract: The main objective of this study is the investigation of the relationship between school level environment and teachers' self efficacy at primary level education. Totally 223 analytical questionnaires were collected by multiple cluster random sampling and the respective validity of those related to school level environment and teachers' self efficacy was evaluated using the expert consensus and item analysis. Cronbach's alpha was used to determine reliability. Multiple regression showed that innovation, cooperation and decision making were sequentially the most influential variables in the teachers' self efficacy and with greatest predictive values. Considering the structural equation model using the Lisrel software, it was concluded that the school level environment with $\beta=0.68$ has the greatest impact on teachers' self efficacy.

Key words: teachers' self efficacy, school level environment, organizational climate, elementary teachers

INTRODUCTION

Nowadays, various organizations provide the productions and services that people need. In doing so, any organization pursues certain goals in the society by fulfilling some multiple or professional tasks. Organization of school education is the one with psychological and economic goals which tries to keep the individuals on the right track towards such goals. That's why it is of great importance in most societies. School level environment is among the influential factors in the teachers' activities. It is closely related to the school administration which considers the school as a formal organization. Therefore, it is similar to the social environments with certain goals, roles, organizational structures, reward system, adaptation, conformity, contribution of individuals and cooperation of parents with teachers. School level environment has been considered for long as an indispensable part of any school education. Several studies confirm the role of school environment in preparing students both cognitively and affectively (Dorman, 1999).

Goodlad (1984) Glatthorn (1984) maintained that school environment is the determinant factor of satisfaction or lack of it in school education, and is related to some variables including interaction between teachers and students, the teachers' activities, and the respective school management, and also cooperation between parents and the school principals. Therefore, any school environment is dynamic and could be modified.

Another variable closely related to the school level environment is teachers' self efficacy. Bandura (1997) assumes that such a self efficacy has its roots in both environmental and individualistic aspects. School environment has also been considered as influential in the teachers' beliefs in self efficacy (Henson, 2001). Also, a major part of human behaviors is stimulated and controlled by self influencing factors of which the most important is belief in self efficacy (Palmer, 2006). According to him, self efficacy is geared to the individual's beliefs and judgment with regard to the fulfillment of tasks and responsibilities, and humans possess a sort of self controlling and self regulating system which govern their thoughts, emotions and fates. Accordingly, people are driven by neither inner forces nor environmental stimuli to perform certain tasks but it is the psychological functions which determine their performances, behaviors, environments, and the respective stimuli. Bandura (1997) also suggested that self-efficacy serves as a productive capability through which cognitive, social, emotional and behavioral skills are effectively regulated for different goals. Therefore, self efficacy and belief in the accomplishment of tasks in various job situations are closely related. Bandura (1997) also maintains that a teacher's self efficacy is the most powerful determining factor of any innovation. Essentially, the stronger belief in self efficacy leads to more efficient performance. Taking into account the above findings, the present study seeks to investigate the relationship of school level environment with teachers' self efficacy at elementary levels in Fars province, southern Iran.

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It is worth mentioning that organization in itself is of no value and people existing within it determine its value and helps it survive and go ahead. So the question here is how to organize an organization so that people engaged in it would have favorable behaviors with low conflicts between them and exhibit their potentialities for creativities and innovations which can result in an enhanced dynamic organization.

Hoy and Miskel (1991) point to the three interrelated concepts; informal organization, organizational culture and organizational climate which together influence individuals' behaviors within the organization. Each of these concepts looks at the organization and respective issues from a certain angle. Nevertheless, they are the non tangible aspects of organization, with distinctive features. Bearing in mind the significance of efficiency of human resources in organizations, as an issue in current discussions, it seems reasonable to investigate the relationship between the teachers' performances and organizational climate because teachers could have efficient performances provided the working environment can encourage them to become innovative and creative in their teaching tasks, and consequently promote their respective organizations. The related literature indicates that any organization possesses its own distinctive norms, values, structures, artistic styles, and reward and punishment system for the respective employers, which altogether constitute the organizational climate. Owens (1998) maintains that any school has distinctive features, referred to as organizational climate. In other words, the school climate can be influenced by the school principals, affect the respective employers' behaviors, and is based on collective understanding. Hoy and Clover (1986) noted that an influential factor in teachers' behaviors is job satisfaction without which (he) does not exert fullest endeavor to achieve the educational goals. As a result, the educational center would have lowest efficiency which in turn damages the leaning efficiency of the students and teachers 'self efficacy.

Behaviorists emphasize the environmental factors as influencing the behaviors. Watson, the founder of behaviorism, considers the mind and mentalism as myths. By the same token, B.F. Skinner emphasizes the behaviors and environment as the cornerstone for any learning behavior. In its radical version, mind, and related issues including those dealing with purpose, free will and goals are denied, however, thought, perception and internal feelings are accepted. Nonetheless, Skinner considers all these aspects in the light of the principles governing the observable behaviors (Ertmer and Newby, 1993). Furthermore, situational factors including school structures, teachers' participation in decision making, school level environment, management style and leadership which encourages teachers' creativity and innovation can influence teachers' self efficacy. Tobin et.al (2007) noted that organizational environment and learning can serve as the significant predictors of self efficacy. Accordingly, school climate can influence teachers' self efficacy. Based on the previously reported studies, the model in Fig. 2 dealing with these factors and with its peculiar components can be evaluated.

**Fig. 1:** The proposed model.

As mentioned above, the main objective of this study is to investigate the relationship between school level environment and teachers' self efficacy using structural equation model, at elementary level in Fars province, southern Iran. The other objectives to be pursued include the followings:
- The effect of school level environment on teachers' self efficacy
- The effect of each component of school level environment on teachers’ self efficacy

**Research Questions:**
- What is the role of each component of school level environment in teachers' self efficacy?
- Does school level environment affect significantly the teachers’ self efficacy?

**MATERIALS AND METHODS**

This study is of causal correlation type. The sample population enrolled in this study consists of elementary school teachers in Fars province, southern Iran. Sampling was carried out using multiple cluster random sampling method. The prepared questionnaires were distributed among the 300 teachers and the results were entered into SPSS. Following a careful analysis, 223 questionnaires were given codes and analyzed afterwards. The proportion of teachers in the study were as follows: 86 (39%) from districts 1 and 3 in Shiraz; 37 (17%) from Kazerun; 36 (16%) from Noorabad and finally 31(14%) from Firoozabad City. Male and female teachers account for 33% and 67% of the study population, respectively.

School level environment Questionnaire Johnson and Stevense (2001) was used in this study to investigate the school level environment and its effect on self efficacy. This questionnaire was initially used by Fraser and
Rentoul (1982) and consisted of 56 items. It was in use from 1982 through 2000, when Johnson and Stevens (2001) brought about some modifications to it and reduced the number of items to 21. Factors including cooperation, student relationship, school resources, decision making and educational environment are evaluated in this questionnaire. To evaluate teachers' self efficacy, the respective questionnaire with 24 items concerning the Self-Efficacy in Classroom Management, Self-Efficacy in Eliciting Support from Colleagues and Self-Efficacy in Eliciting Support from Principals was used (Brouwers and Tomic, 2000). To evaluate the validity of the questionnaires, item analysis was used. In doing so, the correlation coefficient of each item with the total score was calculated and it was revealed that all the coefficients were higher than 0.25 and at P< 0.5 were considered significant. Also, factor analysis was used to evaluate the School level Environment’s Constructive validity and the result confirmed the five variables including cooperation, student relations, school resources, decision making and educational innovation. Considering the result of factor analysis, the self efficacy related questionnaire was evaluated by exploratory technique and one factor, namely professional self efficacy, was added to class management, staff support, and principal support. Two basic indices of KMO and Chi square for Bartlett's test of sphericity were calculated to assess the suitability of the input for factor analysis. The values of KMO for all the factors were greater than 0.70, indicating the suitability of the input and the appropriate conditions for factor analysis. The P value for Bartlett's test of sphericity was found to be less than 0.70 which indicates the significance of the input in factor analysis. Cronbach’ alpha was used to measure reliability. The rate for teachers' self efficacy and school level environment were (α = 0.9) and (α = 0.8) respectively indicating the suitability of both scales.

**Results:**

To answer question 1 (i.e., the role of each component of school level environment in teachers' self efficacy) multiple regression was used, as in table 1, the results of the regression indicated the three predictors explained 32% of the variance (R2=0.32, F=17, p<.01). Considering the main core of the regression, we can conclude that innovation with (β = 0.33, p<.001) cooperation with (β = 0.20, p<.001) and decision making with (β = 0.17, p<.001) were sequentially the most influential factors in teachers' self efficacy and with most powerful predictive values.

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>F</th>
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<td>Constant</td>
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<td>0.29</td>
<td>-</td>
<td>**8.56</td>
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<td>Cooperation</td>
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<td>0.05</td>
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<tr>
<td>Decision making</td>
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<td>0.51</td>
<td>0.17</td>
<td>**2.55</td>
</tr>
<tr>
<td>Innovation</td>
<td>0.23</td>
<td>0.42</td>
<td>0.33</td>
<td>**4.43</td>
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To answer research question 2, (i.e., school level environment affects teachers' self efficacy) Structural Equation Modeling was used. Initially, the correlation matrix for the model was developed as in table 2. All the correlation coefficients except communication and decision making were significant at P<0.01.

<table>
<thead>
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<tr>
<td>Communication</td>
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<tr>
<td>Innovation</td>
<td>**0.43</td>
<td>**0.50</td>
<td>**0.29</td>
<td>**0.22</td>
<td>1</td>
<td></td>
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<tr>
<td>S-C-M</td>
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<td>**0.38</td>
<td>**0.24</td>
<td>**0.34</td>
<td>**0.47</td>
<td>1</td>
<td></td>
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<tr>
<td>S-E-S-C</td>
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<td>**0.51</td>
<td>**0.21</td>
<td>**0.31</td>
<td>**0.45</td>
<td>**0.51</td>
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<tr>
<td>P-S</td>
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Note: **p < .01

S-C-M= Self-Efficacy in Classroom Management
S-E-S-C= Self-Efficacy in Eliciting Support from Colleagues
P-S= Professional self efficacy
S-E-SP= Self-Efficacy in Eliciting Support from Principals

As for the research conceptual model, the SEM of the research variables is presented based on Lisrel output. In the present study, RMSEA = 0.07 so the research model and respective framework were qualified. The other indices of the model include: GFI= .94, IFI= 0.91, CFI= 0.91 and NNFI= 0.88. Therefore, the model is approved. As shown in figure 2, school level environment with (β = 0.68, p<.001) was found to be influential in self efficacy.
Discussion:

Considering the regression main core, innovation with ($\beta = 0.33$, $p<.001$) cooperation with ($\beta = 0.20$, $p<.001$) and decision making with ($\beta = 0.17$, $p<.001$) were sequentially the most effective variables in teachers' self efficacy and with most powerful predictive values. Those schools which cater for encourage teacher's involvement in decision making and respective activities could enhance their self efficacy, i.e., the teachers performed more efficiently and more enthusiastically and could express their opinions. Such an environment can help flourish teachers' innovation, self efficacy and creativity.

Regarding the research question addressing the effect of school level environment on teachers' self efficacy, we used Structural Equation Model and the results show that school level environment with ($\beta = 0.68$) leaves some strong impact on teachers' self efficacy. According to the cognitive theory, teachers' self efficacy is associated with positive behavior, teaching methodology and students' achievements. As Rotter (1966) maintained and based on his Locus of Control theory, it can be concluded that students' leaning and motivation which are closely related to school level environmental factors also influence teachers' teaching and behaviors (Hanson, 2001). Furthermore, the teachers' working environments can also influence their behaviors. Those environments which are supportive and encourage innovation and participation of the working staff can help promote the individuals' motivation which in turn make them feel they work in more rewarding environment. Also, Henson (2001) maintained that teaching atmosphere can be critical in teachers' self efficacy. Bandura's self efficacy theory and perceived self efficacy can shed light on this finding (i.e., the used model in the present study). Bandura (1997) claimed that individual's belief in self efficacy constitute the major part of self consciousness. There are four important sources which help construct and modify the existing self efficacy systems, which include enactive mastery experiences, vicarious experiences, persuasion verbal or social and finally physiological and affective states. The sources associated with self efficacy are not informative by themselves, i.e., they are some raw data which need to be analyzed to become cognitively informative and insightful and useful in terms of reflective thinking. Therefore, we should draw distinction between the anecdotal experiences and data and those which are really and practically influential in self efficacy. Moreover, successful experiences can serve as the source for creating and reinforcing the individual self efficacy (Bandura, 1997). Professional successful experiences can strengthen the belief in self efficacy as a result of task performance (Appelbaum and Hongger, 1998). This source is related to the individual's behavioral effect on the belief in self efficacy. The previous successes and achievements which are based on individual command can provide quick tangible evidence indicating whether the individual can succeed in doing a certain task. Bandura (1997) noted that successes reinforce belief in self efficacy and failures can weaken it especially if occur prior to the formation of such beliefs. The performances which do not lead to the expected results can lower the self efficacy. Belief in self efficacy is established once the individual overcomes the challenges and obstacles through incessant efforts and perseverance. Individuals become more tolerant and tougher when they believe everything is leading to their success and consequently become more diligent and work more feverishly toward their goals. Reinforcing experiences can reassure the individuals of their capabilities and make them more resistant without losing their merits. Such fluctuations in self efficacy beliefs, as related to the professional successes and failures, could have important implications in human resources management.

Bandura (1997) found out that the most important thing that a manager can use to promote the staff self efficacy and believe in their own abilities is feedback and social support. Feedback provides information on the outcomes of actions and helps individuals to understand the relationship between their behavior and the consequences. Social support is crucial because it provides emotional and instrumental help to individuals, which can enhance their self efficacy and behavior. Additionally, consistent feedback and social support can contribute to the development of self efficacy beliefs and are important for the successful implementation of interventions for promoting self efficacy. Therefore, it is important for managers to provide feedback and support to teachers to help them develop and maintain their self efficacy beliefs and behavior.
Efficacy is to help them experience personal dominance in certain tasks and issues. Once a person does something successfully or overcome challenges, s/he grows that kind of authority over his assigned tasks. Accomplishment of more challenging tasks which result in the expected goals and outcomes can enhance personal authority. In such circumstances, the individuals begin with easier tasks and gradually move toward the more difficult ones till they feel they can overcome all the existing and potential challenges and obstacles. To this end, the principals can break the complicated changing tasks into easier tasks and components and assign each individual a part to do. He then considers such small successes and brings them to focus. Tasks may become more extensive drastically so that the staff become dominant on the main task elements and simultaneously face more challenging tasks. Once the staff become qualified in performing preliminary tasks, the managers assign them more responsibilities and in doing so, create more opportunities for them which in turn help lead a group of task force or a committee. Great achievements can be materialized when big challenges are divided between the smaller groups which perform individually. Minor achievements are unimportant by themselves, but can trigger and motivate efforts towards greater successes and achievements.

Identification and appreciation of minor achievement can serve as an impetus toward stronger self efficacy and capabilities. Managers should not only provide effective regulation and strategies for new behaviors, but also encourage individuals to go ahead more diligently and steadily in order to become more in control of their behaviors and reinforcing them. It can also be said that individuals do not rely merely on the previous achievements, but are influenced by substituted experiences through pattern making and learning from others. The patterns related to environmental factors can serve them as effective tools for strengthening personal self efficacy. In many cases, individuals compare their own capabilities with those of others. Pattern making through successful attempts could be an orientation for social comparison and judgments about their personal capabilities. The result is the belief that sufficient efforts can lead to successes despite the obstacles. Pattern making is dependent on assimilation and similarities between the patterns and the observers. Therefore, the merits are evaluated against others’ performances. Social comparisons are the first step of self evaluation in individuals. Most of the time, people in organizations compare themselves with colleagues, rivals, classmates or peers who are in the same positions and status. Such comparisons can help strengthen and reinforce self efficacy in individuals. Through such observations and comparisons they convince themselves that they can also succeed in doing the assigned tasks as experienced in others. On the other hand, observing those who have not been successful despite feverish attempts may reduce the self efficacy in the observers. In the organization, mimicry the chief’s and manager’s behaviors is very prominent in some employees. Needless to say, role playing and imitating others’ behaviors can leave some delicate impacts on social learning. Pattern making can take place in uncontrolled situations in school level environment during daytime when the individual is busy observing others’ behaviors as a method of leaning.

Besides, as Whetten and Cameron (1988) noted, a manager can serve the staff as a pattern through exhibiting favorable behaviors. In addition, the same managers can draw employees’ attentions to the successful cases who had been in the same positions. Furthermore, they can create some conditions which help the employees become acquainted with the seniors and other common employees and in doing so reveal the good patterns to them. By the same token, the managers can bring about some opportunities for the employees to learn from the more successful ones. The other strategy adopted by the managers for the same purpose is to familiarize their staff with the counselors who are experienced enough in the field.

The third source of promoting self efficacy is through verbal persuasion or receiving the messages from the social environment (Bandura, 1997). The purpose here is to encourage the individuals to utilize their capabilities to accomplish the assigned tasks, rather than showing unreal, unpractical expectations which leaves negative impacts on them. Another strategy which helps teachers experience their capabilities is through provision of socio affective supports to them, i.e., seeking their managers and colleagues’ approval and acceptance, which could be through membership to the organizational networks (Whetten and Cameron, 1988). Such networks include the manager, colleagues, the subordinates and the group peers (Bandura, 1996).

If the employees are to feel empowered, the managers should admire and encourage them, receive and treat them supportively, and reassure them. Bandura (1997) maintained that the major part of self efficacy originate in working under supportive and responsive management. The principals, who seek the subordinates with sufficient self efficacy, should appreciate them steadily and sincerely. For example, they can send their staff and even their corresponding families some notes indicating their appreciation. Or, they may display some feedbacks about the staff merits and capabilities. In doing so, they can arrange some gatherings to reveal their positive points to other colleagues and encourage them to have membership to some societies in order to become outstanding among other employees. All such activities on the part of the managers aim to empower the employees and can make them feel they are approved and are valuable asset to their respective organizations and are actually indispensable part of them. Also, the self efficacy of the individuals is geared to and influenced by the emotional and physiologic sides of them. According to Bandura (1997) self judgment of personal capabilities is influenced by the physiologic condition which in turn is under the influence of emotional and physical characteristics”. Emotional excitement refers to the elimination of negative feelings,
fears, anxiety, ill temper, and exhibiting positive feelings such as love, excitement, and leaving others behind (Whetten and Cameron, 1988). Individuals exhibit some abnormalities and disorders under stressful situations, and negative feelings can cause tension and pressure which in turn make the individuals frustrated and eventually damage their self-efficacy. Personal perception of physiologic features such as fear, anxiety, tension and depression cause the individuals to become less competent and efficient in their performances and lose some level of their self-efficacy. Physiologic conditions including tiredness, anger, pain and sufferings are not limited to only unconscious and non-intentional emotions. On the other hand, there are other physiologic conditions such as endurance and resistance which withstand the above-mentioned conditions that are harmful to physiologic capabilities. Therefore, the positive feelings enhance the self-efficacy and negative ones inhibit it. Bandura (1997) suggests that the promotion of physiologic capabilities and reduction of stress and negative emotions together can help enhance self-efficacy and repair the damaged physiologic features. Conger and Kanungo (1998) maintain that the skills and strategies for empowering including emotional support for the subordinates and creating a confidence making atmosphere can help foster the belief in self-efficacy.

**Conclusion:**

The school-level environment related factors, innovation, cooperation, and decision making were sequentially the most influential ones in teachers’ self-efficacy prediction. The SEM used in the present study was of high power and thus, school level environment with \( \beta = 0.68 \) was found to be effective on teachers’ self-efficacy.

**REFERENCES**


