THE EFFECTIVENESS OF SELF-REGULATED LEARNING IN PRE-SCHOOL CHILDREN’S EMOTIONAL SKILLS (ANGER AND AGGRESSION)

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ABSTRACT
Self-regulation as a child’s ability to gain control of bodily functions, managing powerful emotions, and maintain focus and attention. The growth of self-regulation is a cornerstone of early childhood development and is visible in all areas of behavior (Shonkoff and Phillips, 2000). The experimental study with control and random group assignment experiment is used to study the effect of independent variable (self-regulation) on the dependent variable (controlling anger and aggression). The subjects consists 30 pre-school children (from one area in Tehran city), divided randomly between the experimental and control groups. Both of groups received self-regulation and anger pre-tests. Training method took place with the help of self-regulating game-Melissa Player (Ida, 2011) for experimental group. After training on experimental group, the post-test was taken from two groups. The results indicate that self-regulated training could be effective in controlling emotional skills of children in a form of controlling anger and aggression emotions.

Keywords: Self-Regulation, Emotional Skills, Anger, Aggression, Preschool Children

INTRODUCTION
After entering pre-school level a child, gradually, finds out he needs skills to help him to control his behaviors and activities in order to do his routine activities. With regular daily exercises and internalizing and teaching these techniques to the child, we can provide a better life for him. But it should also be noted that training should be done gradually and continuously just like teaching bike riding skills (Tominey and Mc Clelland, 2010).

Studies show that the children, who have learnt these techniques from their childhood and at the beginnings, could have used it in all stages of their education in the future (Blair, 2002). Children should be educated in the first 5 years of their life to develop their functional self-regulatory skills (Self-Regulation), and this means that in the early years of development, teachers need to develop games to teach self-regulating that can affect a child's thinking and behavior through this teaching. This requires a strong educational environment and conditions in which daily activities should be targeted and teachers should note that, they should practice the skills taught in a daily manner in kindergarten environments and their classes (Galinsky, 2010; Miolanen, 2007).

Self-regulation means all these skills which act unconsciously and affects an individual's behavioral processes. It controls all the needs, all behavioral control skills such as (emotional skills, sense of failure, etc.) and controls the individual's performance and leads him towards goal and success. The ability to self-regulate means not to be surrendered by failures and admitting the accepted standards of the community, school, family and work place (Miolanen, 2007). It can also be expressed that the ability to control behavior and managing emotions, thoughts and behavioral with the individual skills (Barkley, 2004; Mc Cleland et al., 2010).

With the gradual growth of children, self-regulatory skills become more complex and more organized. By the child's birth, the stimulus and response systems along with the environmental stimuli regulate this arousal system; for example, a baby sucking his fingers makes an appropriate response to his environment and adapts himself with the conditions. From the toddler age, the child begins preventive behavioral processes against his mother or surrogate mother. From the age of 4, the child unconsciously begins to
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perform self-regulation techniques in an instinct way, so that the child changes his response to the intended stimuli in a way that he meets his needs and desires (Zimmerman, 2005). Gradually, with the growth and complexity of brain structure, the structure of the evolved behaviors such as self-regulation, grows and varies further. So that the child unconsciously begins to use self-regulating techniques to reach his goals and wishes. The child learns these strategies and their operational management, (correct entering of information and selecting the right answer, controlling the level of emotions and preventing the explosion of feelings and …) through proper education appropriate with their age. When a child internalizes self-regulation repeatedly and without the help of adults; it means that has reached a stage of growth and development that he can be placed in a high level of thought and personal planning and reach an independent personal management (Miolanen, 2007).

The ability to control emotions is closely related with the development of cognitive abilities, as though the child should reach at age where he should be able to recognize how to behave in the situation occurred and should have reached the reflective thinking stage. He should also able to think subjectively and objectively. A child who has reached this stage can answer and act in a controlled and organized way in the emotional process (to be self-regulator) (Shonkoff and Phillips, 2000).

These self-regulating children evaluate their behavior in a self-monitoring way and assess their abilities and even they score themselves ethically in some cases. These children can change their behavior in accordance with the conditions when needed and can control their emotions even there if there might be a delay in achieving their desires. For example, a self-regulating child that knows he is going to have an important exam and yet there is a great desire to play with his peers, he prefers studying and preparing himself for the exams rather than playing with friends and this is done without the need for a coach or parents' advice (Lakes and Hoyt, 2004).

Children, who are unable to control their anger and aggression, are less successful in getting the self-regulating learning points. In contrast, restless children, children who are able to adapt to the conditions, are calm in these conditions and are more focused during learning skills. At this time, the child learns that instead of having bad feelings, he can substitute good feelings instead he can show positive self-perceptions from the events rather than misperceptions, for example, a child who has learned to control her feelings effectively and accurately can make such an interpretation in his mind in a failure and can change [I'm not good for this] to [This is a difficult task, but if I do my best I will be successful] (Bodrova and Leong, 2007).

Self regulation against anger and aggression with peers in group games can also be adjusted with increasing game-like trainings, and so teach children the ways to control anger and aggression. Learning emotional controlling skills is like using the most at because using both emotional controlling technique and the most at are both intentional and willful. Both require knowledge of the environment and purpose and the equipment needed for their proper use. For example, self-regulation of anger needs intention and purpose (I don't hit my friend) (So I tightly keep my hand so that I can't hit my friend) (Zimmerman, 2005).

This research aims to investigate the effectiveness of self-regulatory learning in creating social-emotional skills in pre-school children to see how this training can be effective in controlling emotional-social impulses of children.

The main research question is whether is there a difference in the children's behavior before and after training self-regulation in controlling anger and aggression emotions?

MATERIALS AND METHODS

The experimental research with control group and random assignment experiment is used to study the effect of independent variable (self-regulation) on the dependent variable (controlling anger and aggression). In this research, the subjects are divided randomly between the experimental and control groups, of course after the pretest and matching the scores in order to increase the internal validity. Educational method is using training methods that with the help of self-regulating game (Melissa Player) (Ida, 2011), takes place about controlling social - emotional skills (anger and aggression). About the
control group that has received no training and only pre-test is performed to them and their results are compared with the results of the experimental group.

The population consists of all pre-school children aged 4-6 in Tehran in the 2012-2013 school year. A kindergarten in the city center was selected from among some other kindergarten names which were located in the same geographic area. To keep the confounding factors consistent (socio-economic status of the family, parental education, family size) that can somehow lower the quality of the research in terms of accuracy and affect the results, 20 kindergarten names were written on paper and one kindergarten was selected and studied.

Total number of children in this kindergarten (Aftab) who were at ages 3-6 years (appropriate age for instruction), were 75 children. 20 individuals were selected randomly selected for the research projects and due to the loss of participants (the lowering agent of internal validity) during the experiment; the investigator added 10 other participants to the population (to increase the internal validity of the test) and all these children were selected randomly based on the list. A total of 30 children that 15 are in the experimental group and 15 are in the control group.

Materials
Two questionnaires with a Likert rating scale are used in this study:

- **Child Self Regulation Questionnaire**: This questionnaire consists of 13 questions and is built by Doctor Toana and Moore (2002) and can show 3 factors of: 1 – The ability to self-regulate emotions, 2- self-regulation in children's behavior, and 3 – cognitive self-regulation. This questionnaire was first applied by Zahedi (2007) in Iran in order to do the norms. Zahedi assessed its reliability and validity and he found the reliability and validity index in the following way: Emotional self-regulation coefficient of alpha=0.92 and behavioral self-regulation = 0.95 and cognitive self-regulation=0.98 and the total alpha coefficient=0.958. In this study, regarding the statistic data for the data obtained with the help of spss 18 software the following coefficients were obtained: Cronbach's alpha coefficient for the emotional-behavioral self-regulation (here briefly, it is mentioned as behavioral) is equal to 0.99; and for the cognitive self-regulation equals to 0.98. And overall the total Cronbach's alpha coefficient obtained using the software spss 18 is 0.98. The following grading sub-scale of the self-regulation questionnaire is like the following that the questions are on a Likert scale of 4 that the trainer gets a score from 1-4 by select in gany of the options below respectively, always, almost always, often, sometimes, never.

- **Questionnaire of Aggression and Anger in Children**

This scale is a 42 item scale with a Likert rating scale for the assessment of pre-school children's anger and aggression in the following 4 scales: 1 – Physical, 2 – relational, 3 – responsive, 4 – verbal. The questionnaire used by Rajabpur and Hosseini (2011) to examine the effectiveness of group therapy in the treatment of aggression in relation to pre-school children. Rajabpur and Hosseini (2011) found Cronbach's alpha coefficient for anger regarding the scores of both physical and responsive subscales as 0.89 and for the both verbal and relational subscales that assess aggression as 0.92, that was acceptable regarding the reliability and validity in children's level. This questionnaire is also filled with the assistance of kindergarten's trainer. In the present study, the aggression and anger scores were examined based on the subjects' score. Cronbach's alpha coefficient in the research based on spss18 software for anger (scores related to questions 1-22) was 0.98 and for aggression (scores related to questions 23-42) was 0.98. Total overall score range between 0 and 168, and the high scores indicate high levels of aggression and anger in children.

Procedure
The subjects' behavior during class and group games and training exercises were observed and the questionnaires were filled to avoid the research bias by the researcher with the help of a coach and an assistant coach and the researcher himself. As though 3 questionnaires were prepared for each individual (for each individual, the scores obtained from the 3 questionnaires were considered as the criterion). After taking the pre-test and summing the scores and matching them in two self-regulation and aggressiveness tests for each individual; we put the children paired in the same level randomly into two groups of
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Experimental (n = 15) and control (Rajabpur and Hossini, 2011) group (so that each pair of the same level, one was placed in the control group and the other was placed in the experimental group in the random way). No training was received in the control group, and they were continuing their daily activities. But for the experimental group the self-regulation training program was done with the help of game method (Melissa Player) (Ida, 2011) that was performed in a week, 2 hours a day, and the trainer received 2 weeks of training to practice the technique with the children. In the third week they rested and in the fourth week the test was performed to compare the data results. In this way, the trainer trains the children in 30 days. He teaches the children some of the basic principles of in controlling anger and aggression and emotional self-regulation through an organized and planned program. The first session is related to getting acquainted with the children and asking and answering questions to know the children and their knowledge of the principles to be taught. In the second training session, the trainer wants to teach priority to the child through games and inquiries. In the third day, the trainer teaches the child how to help others through childish games. In the fourth day the trainer reminds the priority right to the child through games and teaches he not to compromise or ignore others interests to reach his own interests. In the fifth day, the trainer teaches the problem solving techniques to the child with the help of story and without the use of violence so that he would not resort to violence technique and would remember other solutions. In the sixth day the trainer, by asking questions, ask the children to restate the situations that have happened to them during this educational period to their friends and that they have changed their strategies by the help of these instructions, this will help the child’s interest in restating and his activeness. In the seventh day the trainer somehow engages parents in this educational affair, in a way that he asks them to record the child's activities for two weeks for the trainer. The factors that he considers, includes the use of instructional techniques and change in behavioral and administrative procedures. So that the child has made these trainings operational. During the next two weeks the trainer tries to review the learnt materials through games and stories with blank spaces. In the third week they will rest and in the fourth week the children will be taken the post-test and their score analysis will be conducted through the score comparison.

RESULTS AND DISCUSSION

Results

Table 1: Compare mean scores anger & aggression before and after self-regulated training in subjects group

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t-value</th>
<th>Freedom Degree</th>
<th>Significant level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>15</td>
<td>26/60</td>
<td>3/24</td>
<td>4/65</td>
<td>14</td>
<td>0/000</td>
</tr>
<tr>
<td>Post-test</td>
<td>15</td>
<td>31/33</td>
<td>4/36</td>
<td></td>
<td></td>
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</tbody>
</table>

As can be seen in Table 1, the mean scores of children’s anger and aggression before self-regulated training are less than after training, and significant difference is observed by applying t-test, at p> 0 / 000 level. Important point in this study indicated that the average Pretest score for anger & aggression for subjects group was 26/60, and it was low; however, the average score for the Post-test concerning the anger & aggression was 31/33, which means there has been a considerable difference between the pre-test and the post-test in subjects group. The difference, in fact, shows a increase in controlling aggression in subjects group and effectiveness of the self-regulated training.

Table 2: Independent-sample T-test for control and experimental group in post test for anger & aggression

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t-value</th>
<th>Freedom Degree</th>
<th>Significant level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control group</td>
<td>15</td>
<td>51.00</td>
<td>15.57</td>
<td>4.91</td>
<td>14</td>
<td>0/000</td>
</tr>
<tr>
<td>Experimental group</td>
<td>15</td>
<td>43.00</td>
<td>11.55</td>
<td></td>
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The mean score for control group in anger and aggression was 51, and the mean for experimental group in post test for anger and aggression was 43. As can be observed in Table 2, the effects of self-regulated training in children's aggression control was important, and significant difference is observed by applying t-test, at p > 0.000 level. Consequently, the higher practice in self-regulated learning, the reducer the children's aggression.

Conclusion and Discussion

Following the answer to the research question of whether children's behavior before and after training in self-regulation of controlling anger and aggression emotions, the results indicated that learning self-regulation can be effective in controlling children's emotional skills that is consistent with the findings of other researchers.

Derry and Reed (2007) using show techniques, examined the self-regulatory influences on the decrease in children's aggression. They also found that self-regulation can be taught to the children through the role of playing, and this was effective in reducing children's aggression in the post-test. This is consistent with the results of present study.

In another study conducted by McClelland and Morrison (2006) the title of their research is investigating the impacts of training emotional and social skills, such as aggression, on the individual abilities of pre-school children, the results also indicate that there is a significant relationship between the experimental and control groups in reducing aggression through self-regulating techniques, and the more the children are capable of self-regulation, their aggression scores reduce. These results are consistent with the results obtained by the present study.

Dulak and Talor (2011) in their research investigated the effect of self-regulatory in controlling the social and communication skills of school children. They found that the higher the degree of dominance over social skills the less the significant level of aggression.

This finding is also consistent with the research. Zimmerman (2005) in his study has proved the impact of reducing aggression based on the techniques of self-regulation. Zimmerman indeed knows the role of genetic factors ineffective anger management and this debate needs medical and genetic research to investigate the history of family violence on children.

Anderson (2002) has found in his research on the self-regulation of pre-school children's emotional – behavioral skills that the highest influence of this training would be recognized when these skill related techniques, be applied in requirements, and fulfill a person's needs and also be more effective in an individual's interpersonal and social relations, as well as his personal life. It should be kept in mind that considering the young age of children, training practices will be quite different from adults because children are spontaneous creatures, in other words, they know how to act in order to get the best results. The researcher has also obtained a similar result.

Ida (2011) in his research which was based on the work on self-regulation learning techniques on children's social and emotional skills increase in behavioral aspect, has reached the conclusion that the teaching role of these techniques, and also frequent exercises and the teacher's encouragement versus children's correct behavior has a very important role in improving communication and behavioral skills and their scores in the post-test has improved a lot that these results are consistent with the data obtained from the researcher's study.

According to data obtained from this study, the researchers state that teaching self-regulation techniques that were regarding the children's age with the playing method and also the repetition of these trainings for the children to practice more and to obtain more skills in this technique has more effects in the reduction of children's anger and aggression and the increase in children's emotional and social skills and behavioral interaction with their peers. And generally leads to the acquisition of children's emotional and social self-regulatory skills. Researchers have suggested that no research has been conducted in other fields of social and emotional skills, such as empathy and altruism and moral development in Iran, therefore, the scope of research is open and interesting results can be achieved in training skills of self-regulation. Also, this research can also be conducted on the age group of 2-4 years; of course, this requires working experience with children and higher tolerance and more practice.
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