SETP™ Tool for Creativity and Innovation Enhancement  
(Modified Application for Teenagers)

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Abstract: Innovation and creativity are important traits to achieve enduring success in today’s competitive landscape. SETP tool was applied on school-going teenagers to improve innovative and creative abilities. Four criteria related to ideas were rated for assessment namely i) number ii) quality iii) relevancy and iv) analytical progression. Number of ideas score during pre-training was 3.90±1.147 while for post-training it was 6.82±1.380. Score for quality of ideas during pre-training was 3.78±1.200 and after training it jumped to 7.74±1.337. Relevancy of ideas scored 4.00±1.069 before training and it also significantly improved to 6.76±1.379. Grades for analytical progression of ideas during pre-training was 3.94±1.096 while for post-training situation it was 7.66±1.239. SETP tool undoubtedly proved its significance for improving creativity and innovative abilities for teenagers.

Keywords: SETP™, Creativity, Innovation, Seven Effective Thinking Patterns™, ideas

Introduction:
The creativity as the term implies is to create or generate something new. But one has to understand that creation of only new is not sufficient, it has to be of value. Value means it should be usable idea and should create better way of doing something as compared to earlier. Innovation and creativity are essential and backbone for competitive edge. It is rightly said that innovate or evaporate. Importance of creativity and innovation is well known in corporate and business world. Many organizations have built in organizational culture and high-end trainers for promoting creativity.

In spite of such a preciousness of the creativity no systematic tool is available for developing the creativity for teenagers. We all agree that school and college age impressions last for life long and any habit cultivated at this malleable age can work wonders. Keeping this in mind the tool SETP (Seven Effective Thinking Patterns) designed and developed by Dr. Arvinder Singh was studied on teenagers. The SETP tool teaches to harness the maximum potential of mind by focusing on seven different thinking faculties individually and finally integrating them synergistically to achieve optimum and effective result.

The Seven Effective Thinking Patterns are:

1. Metacognitive Thinking Pattern
2. Objective Thinking Pattern
3. Constructive Thinking Pattern
4. Critical Thinking Pattern
5. Creative Thinking Pattern
6. Emotive Thinking Pattern
7. Radiant Thinking Pattern

The “SETP” teaches how to use these patterns and customize sequential order of employing the thinking pattern depending on the varying situation. Improvement in cognitive abilities mainly creativity was studied here.

Review of Literature:
Need for creativity and innovation is well known. Various researchers and authors have worked on this subject. Father of brainstorming, Alex Osborn (1953) devised four widely cited principles that
serve to encourage high-value generative thinking. Dr. Edward de Bono has introduced the term ‘Lateral Thinking’ which teaches about the art of generating ideas. In ‘Six Thinking Hats’ course with the help of green hat Edward de Bono emphasizes the need and teaches creativity. Out of box thinking is commonly used term for creating new wild ideas. Alex Osborn says “It is easier to tone down a wild idea than to think up a new one”. We may need to entertain lots of ridiculous or irrelevant ideas before happening on more feasible options. The more unusual the idea is, the better it works. Runco M.A. and Pritzker, S.R. (1999) is of opinion that irrespective of intellectual level, a person can become creative if he finds, develops and practices the right skills and tactics. O’Connor et al (2000) insisted on the need of reframing the problem for finding hidden solutions that otherwise may be difficult to find.

Material and Methods:

The sample comprises of 50 teenagers randomly selected from convent schools of Udaipur district of Rajasthan. The age of sample ranges between 14 to 18 years and were 32 boys and 18 girls. They were all of middle socio-economic status and were average on academic achievements. They were given topic of “Flowerpot Usage and Application”. Students were individually asked to generate and relate ideas for 20 minutes. The answer sheets were labeled my unique number given to students. Then students were trained by SETP tool. After training program they were asked to generate and relate ideas on the same topic and the answer sheets were labeled again by unique number. Two independent evaluators on prescribed parameters evaluated answer sheets and given scores of both were averaged. The evaluators were kept blind about any tool applied and were not told that they are evaluating the same student twice. In short evaluators evaluated 100 copies unaware of SETP tool application. The selected parameters for evaluation of essay were:

I. Number of Ideas
II. Quality of Ideas
III. Relevancy of Ideas
IV. Analytical Progression of Ideas

The evaluation was done on the basis of scores from 1 to 10. Results were analyzed by the Paired ‘t’ test was used for comparing pre and post training scores. All the calculations were done through SPSS Version 21.0.

Results
Table below showing Comparison of Creativity and Innovation before and after SEPT Training

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Mean Difference</th>
<th>T</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Ideas</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pre-training</td>
<td>3.90</td>
<td>50</td>
<td>1.147</td>
<td>.162</td>
<td>2.920</td>
<td>24.905</td>
<td>.000</td>
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<tr>
<td>Post-training</td>
<td>6.82</td>
<td>50</td>
<td>1.380</td>
<td>.195</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Quality of Ideas</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Pre-training</td>
<td>3.78</td>
<td>50</td>
<td>1.200</td>
<td>.170</td>
<td>3.960</td>
<td>46.303</td>
<td>.000</td>
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<tr>
<td>Post-training</td>
<td>7.74</td>
<td>50</td>
<td>1.337</td>
<td>.189</td>
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<tr>
<td>Relevancy of Ideas</td>
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<tr>
<td>Pre-training</td>
<td>4.00</td>
<td>50</td>
<td>1.069</td>
<td>.151</td>
<td>2.760</td>
<td>23.738</td>
<td>.000</td>
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<tr>
<td>Post-training</td>
<td>6.76</td>
<td>50</td>
<td>1.379</td>
<td>.195</td>
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<td></td>
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<tr>
<td>Analytical Progression of Ideas</td>
<td>3.94</td>
<td>50</td>
<td>1.096</td>
<td>.155</td>
<td>3.720</td>
<td>41.091</td>
<td>.000</td>
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<tr>
<td>Total Idea Scores</td>
<td>Post-training</td>
<td>Pre-training</td>
<td>Post-training</td>
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<td></td>
<td>7.66</td>
<td>50</td>
<td>1.239</td>
<td>.175</td>
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<td>15.62</td>
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<td>2.320</td>
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<td>28.98</td>
<td>50</td>
<td>2.591</td>
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<td>71.508</td>
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</table>

**Discussion:**

The above table shows the mean and standard deviation score on number of ideas during pre-training situation was 3.90±1.147 while for Post-training situation it was 6.82±1.380. The mean difference was found to be 2.920 and the ‘t’ score was found to be 24.905, which is significant at 0.01 levels. It infers that there is significant difference between Pre and Post-training scores. Furthermore the mean scores reflect that there is significantly positive impact of SEPT training in increasing number of ideas.

The above table visualizes the mean and standard deviation score on quality of ideas during pre-training situation was 3.78±1.200 while for Post-training situation it was 7.74±1.337. The mean difference was found to be 3.960 and the ‘t’ score was found to be 46.303, which is significant at 0.01 levels. It proves that there is significant difference between pre and Post-training scores. Furthermore the mean scores reveal that there is significantly positive impact of SEPT training in quality of ideas.

The above table indicates the mean and standard deviation score on relevancy of ideas during pre-training situation was 4.00±1.069 while for Post-training situation it was 6.76±1.379. The mean difference was found to be 2.760 and the ‘t’ score was found to be 23.738, which is significant at 0.01 levels. It results that there is significant difference between Pre and Post-training scores. Furthermore the mean scores supports that there is significantly positive impact of SEPT training in increasing relevancy of ideas.

The above table denotes the mean and standard deviation score on analytical progression of ideas during pre-training situation was 3.94±1.096 while for Post-training situation it was 7.66±1.239. The mean difference was found to be 3.720 and the ‘t’ score was found to be 41.091, which is significant at 0.01 levels. It signifies that there is significant difference between Pre and Post-training scores. Furthermore the mean scores deduce that there is significantly positive impact of SEPT training in increasing analytical programming of ideas.

The above table shows the mean and standard deviation score on total idea generation during pre-training situation was 15.62±2.320 while for Post-training situation it was 28.98±2.591. The mean difference was found to be 13.360 and the ‘t’ score was found to be 71.508, which is significant at 0.01 levels. It infers that there is significant difference between pre and Post-training scores. Furthermore the mean scores prove that there is significantly positive impact of SEPT training in increasing total idea generation.
**Conclusion:** Innovation and creativity are important traits to be successful in this competitive era. Students also need creativity to choose their career, better and fast problem solving, sharpen communication skills, confidence building and to attain better grades. The SETP tool here worked effectively for improving creativity and innovation in students. More than 85% improvement occurred in overall performance of students irrespective of gender. All four parameters to judge the creative ability of students showed significant improvement from 60% to 90% in just 5 days training session. As common saying is that practice makes a man perfect or in other words we can say that practice is mother of all skills. So we can be pretty sure that students if keep on practicing SETP tool, the improvement will be manifold. At this tender and formative age of students, inculcation of creativity and innovation skills will go long way. SETP is new and effective tool, which will certainly help students to be generative, innovative and creative. This will pave the path for enduring success for their whole life.

**References:**
5. Gelb, Michael (2000), *How to Think Like Leonardo da Vinci: Seven Steps to Genius Every Day*, Dell