

Let's think in Little People's and Person's Worlds! A Summer Homework by Son and Father with TRIZ (2nd Time)

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Abstract

"One day, a screw that stuck to a magnet was magnetized. Why? Can I make a permanent magnet?"
 The youngest son, who had seen the eldest son's research on water strider, also wanted to try TRIZ. We will report our process of the 2nd research worked together especially with the guidance of TRIZ-thinking by father. The purpose of the present study is obtaining of deep understanding of the principle and a certain experimental methodology. It is achieved by analyzing a technical problem "Magnetization of Metal" in detail by obtaining the hint from the experience of daily life, and producing the experimental methodology. Moreover, we challenged the idea-making of an original merchandise this time. As special mention, we also used some techniques this time not used in the research of the water strider. Conception method by "SLP (Smart Little People) and personification", Analysis method by "T1:T2:T3 (Analysis at time-domain)", "Attribute Listing" and "Substance-Field Analysis", et al. were used this time. We recognized that the hint to solutions for technical problem existed in usual life and our experience. And, when creatively acting with the child, we strongly appeal that the following matters are important. 1: Enjoy it together, not teaching. 2: Using methods isn't the purpose. 3: Moderate "Volume" and "Speed" 4: Continue the motivation of "Curiosity and happiness" by "Praise and Admitting".

Chumming
with
Friends

T1 Past	T2 Present	T3 Future	What's happened? Ideas
<p>To chum more</p>	<p>Not to chum</p>		

Extended Abstract

1. Points of approach

- 1) **Discovery of Experiment Parameter through the personification and various analysis methods**
 - (1) **Let's think in Little People's and Person's Worlds!**
 We paraphrase "Magnetization" to a simple word, and associate "Events in Little People's and Person's Worlds", then chose four scenes. Scene deployment according to the passage of time, "T1:T2:T3" (Past, Present and Future) were used with "Punch Picture".
 - (2) **Return to the Magnetic World!**
 The solution is returned to that in the world of the magnet, classified by three aspects (S1: Magnet, S2: Screw, F: Gap) and subdivided by "Affinity Diagramming". We chose the classification group name as "Physics parameter" used in the experiment.
 - (3) **Think about the Influence that each Physics Parameter gives to magnetic!**

- We thought about changing-pattern of physics parameter for "Magnetized / Non-magnetized". And, we decided the experimental methodology, the condition (parameter combination), and the criterion.
- 2) **Confirm by Experiments**
 - 3) **Create Original Ideas**
 - (1) **Think by Noun, Adjective, and Verb!**
 We re-analyzed the feature of the magnet by using "Attribute Listing" (noun, adjective, and verb). We considered ideas that used this feature.
 - (2) **Describe Best Idea in the picture!**
- ### 2. At the end
- We appeal the following important matters.
- 1: Enjoy it together, not teaching.
 - 2: Using methods isn't the purpose.
 - 3: Moderate "Volume" and "Speed"
 - 4: Continue the motivation of "Curiosity and happiness" by "Praise and Admitting".