



An introduction to a new educational program of POSCO TRIZ College for TRIZ beginners

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Introduction

- ▶ POSCO & POSCO TRIZ College?
- ▶ POSCO & POSCO Family Co. are one of the most famous companies to educate and use TRIZ in the world.
- ▶ POSRI(POSCO Research Institute) plays a central role in TRIZ education by managing POSCO TRIZ college.
→ Education & Consulting

Issues of TRIZ Education

- ▶ Now,
 - Most beginners have difficulty understanding the TRIZ concepts and contents.
 - The effectiveness of TRIZ education is sometimes doubted.

- ▶ Therefore,
 - POSCO TRIZ College has developed and managed a new educational program for TRIZ beginner starting in 2013.
 - Its purpose is to teach TRIZ easily, entertainingly & practicably.

Outline of TRIZ Education

- ▶ Pre-existing TRIZ curriculum for the beginner consists of instructor-led lectures for 16hr (2days).
- ▶ New curriculum is a blended educational course – i.e. e-learning, lecture, practice, and experiential learning.

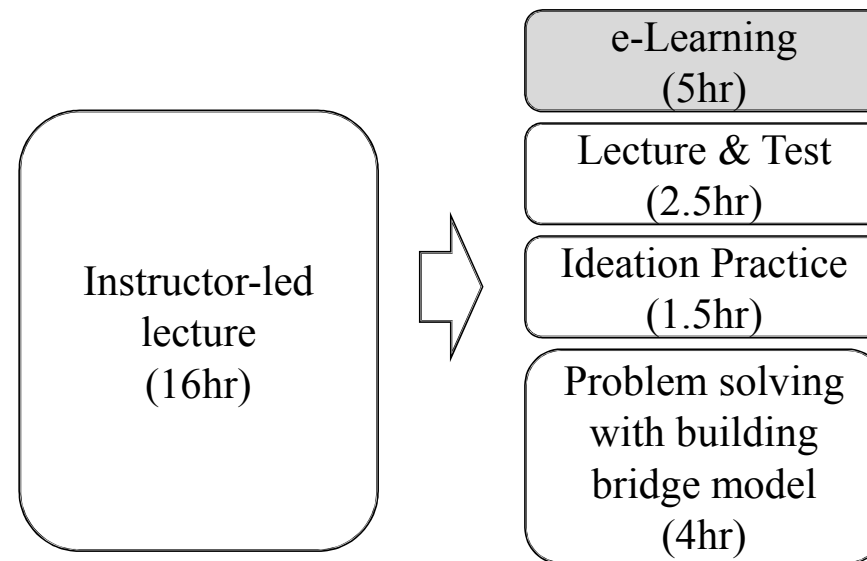


Figure 1. The blended curriculum for TRIZ beginner

Stage1. e-Learning

- ▶ The trainees have to take an e-learning course for TRIZ beginners (5hr)



Figure 2. e-Learning of TRIZ Level1

Chapter	G1
1	Needs of Creativity
2	Suggestion for Creativity
3	Concepts of TRIZ
4	IFR
5	Function
6	Resource
7	Contradiction 1
8	Contradiction 2
9	Inventive Principles
10	Application Case of TRIZ

Table 1. Contents of e-Learning

Stage2. Lecture & Test

- ▶ The trainees take a lecture of TRIZ to supplement shortcomings of e-Learning (2hr) .
 - Review & Supplementary Lecture
- ▶ After that, the trainees take a test (0.5hr).

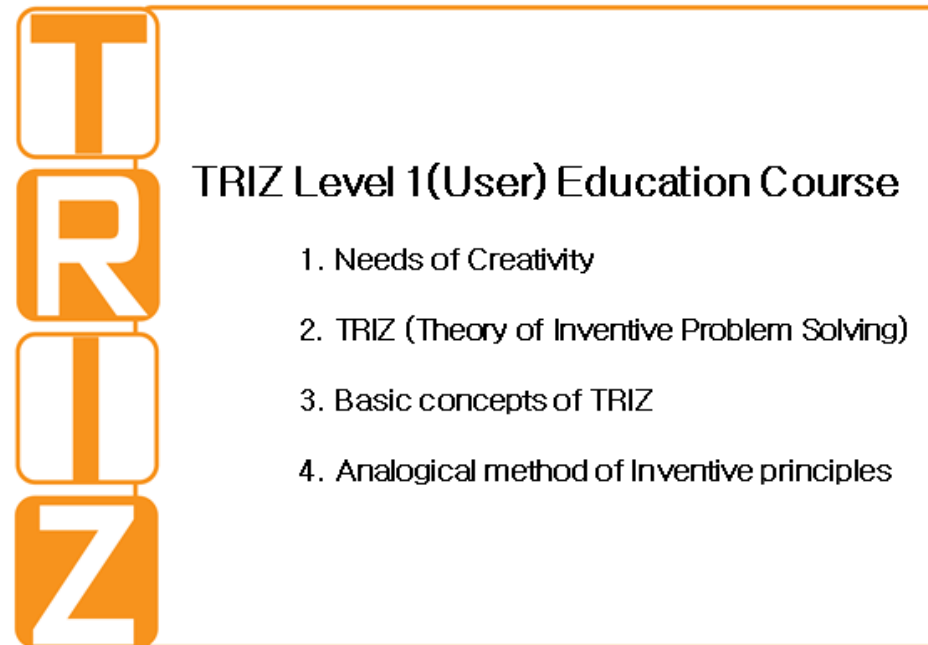


Figure 3. Contents of TRIZ Level1 lecture

Stage3. Ideation practice

- ▶ The trainees have a practical exercise to use TRIZ concept & Inventive principles (1.5hr).
- ▶ POSRI had designed a TRIZ One-sheet to aid understanding and using TRIZ contents on ideation

1. Definition	2. Modeling	3. Ideation						
◇ Problem situation	◇ Function <table border="1" style="margin-left: 20px;"> <tr> <td>S</td> <td>V</td> <td>O</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	S	V	O				◇ Inventive Principles
S	V	O						
◇ IFR	◇ Contradiction <table border="1" style="margin-left: 20px;"> <tr> <td>Useful</td> <td>Harmful</td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	Useful	Harmful			◇ Idea (Solution)		
Useful	Harmful							
	◇ Resource							

Figure 4. TRIZ One-sheet for ideation

Stage4. Experience learning

- ▶ The trainees solve a problem of building bridge model (4hr).

First. Conceptual Design & Exploration of problem
(1hr)

Second. Finding contradictions & Solving them with TRIZ one sheet
(1.5hr)

Third. Making bridge model using wooden chopsticks & materials
(1.5hr)

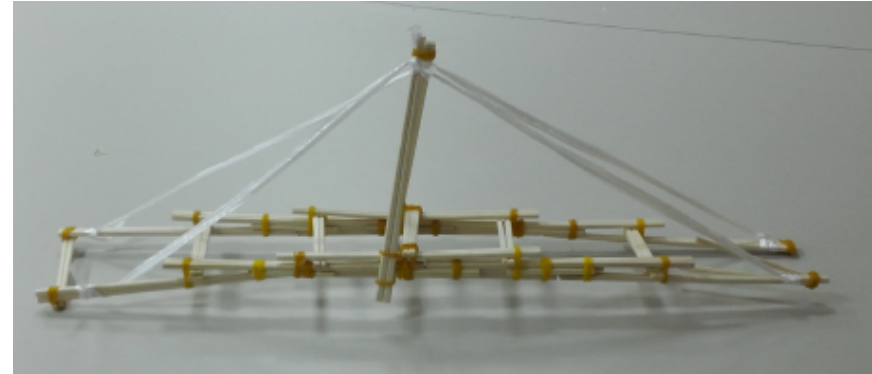
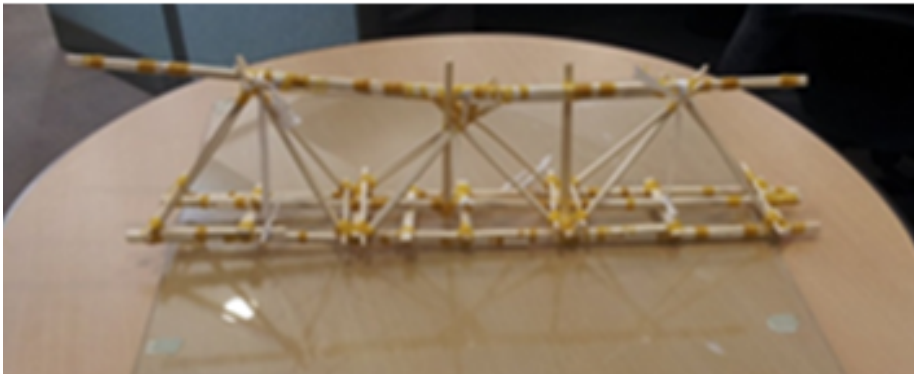
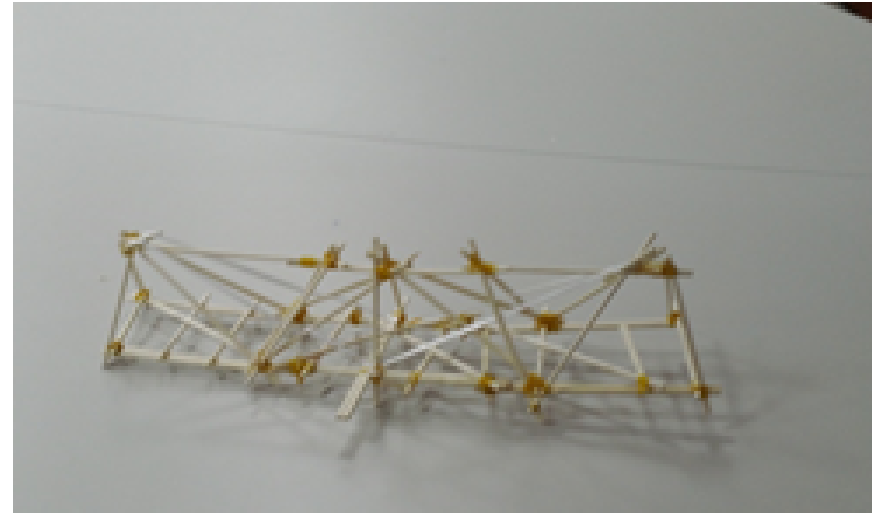
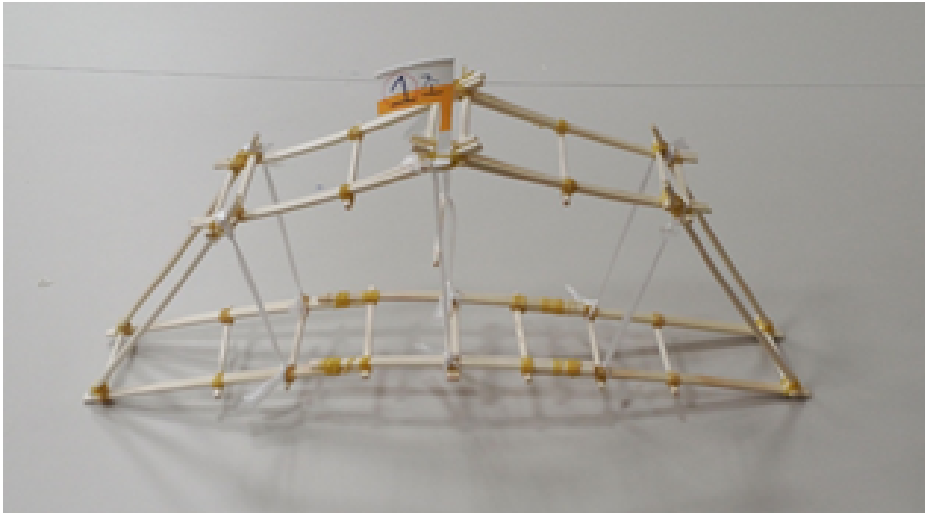
Figure 5. Sequence of Experience learning

Pictures of Class

- ▶ The trainees learn TRIZ easily and entertainingly.



Products of the trainees



Ideation Experiment

- ▶ The experiment was conducted to measure the degree of ideation with or without a TRIZ One-sheet between groups.
- ▶ The task given in the experiment was to design a new saddle for a bicycle.
- ▶ The result of the experiment was evaluated with the quantity of ideas. It support an effect of TRIZ One sheet.

Group	G1	G2
Participants [N]	31	28
Avg.[ea]	4.10	5.43
STD	2.80	2.13

Table 2. Ideation experiment: An average & Standard deviation of conditions
 Note. G1 = Group without TRIZ One-sheet, G2 = Group with TRIZ One-sheet

Conclusion

- ▶ As the result of education, this curriculum is considered as an effective and successful program on the aspect practicality and usefulness.
- ▶ POSCO TRIZ College expects this blended curriculum might be an exemplary reference of TRIZ education.