



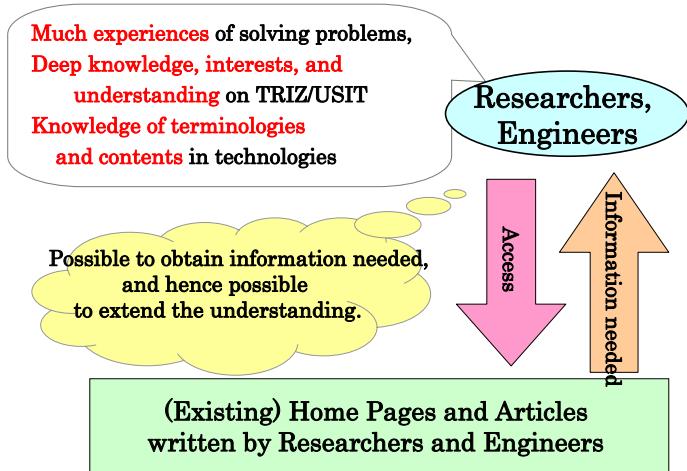
"TRIZ Home Page for Students by Students": Understanding TRIZ/USIT by Solving Everyday-Life Problems

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 Mizuo Omori, and Toru Nakagawa
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(Thesis Works at Nakagawa's Seminar Class, Mar. 2006)

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Needs for a TRIZ Home Page for Students (1)



1. "TRIZ Home Page for Students by Students"

Established on Mar. 18, 2006



2. What we think we obtained
 by studying TRIZ/USIT

- A record of the discussion just
 before the graduation -

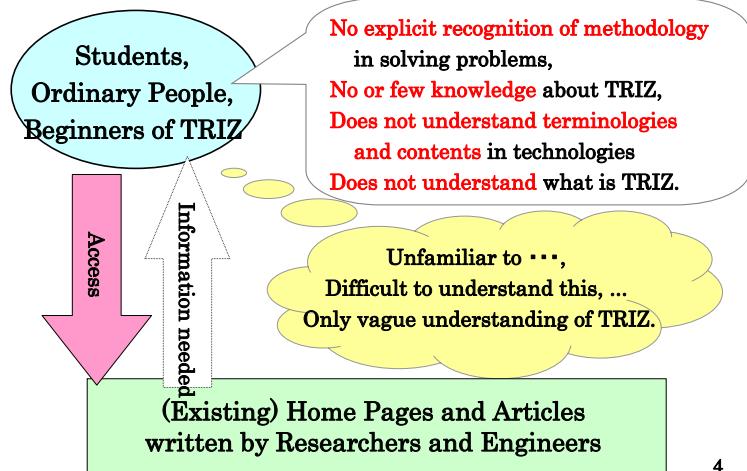


3. Case Studies (from thesis works)

- (1) How to fix a string shorter than the needle.
- (2) How to prevent from shoplifting at a bookstore
- (3) Trains for getting on/off smoothly

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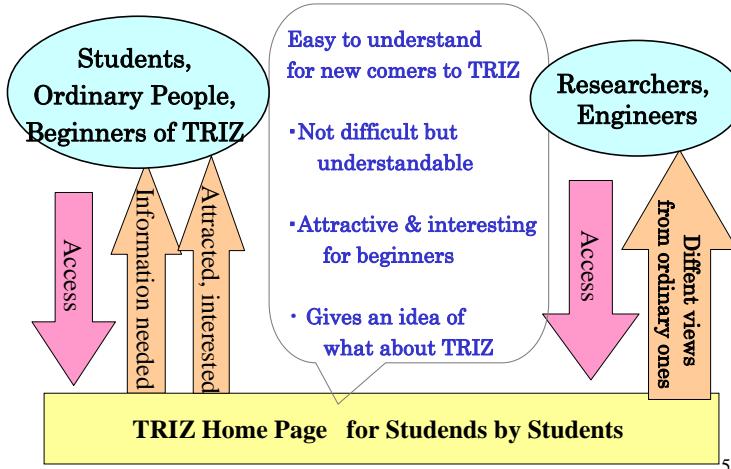
Needs for a TRIZ Home Page for Students (2)



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Needs for a TRIZ Home Page for Students (3)



TRIZ Home Page for Students by Students

• About TRIZ:

Introduction to the History and Methods in TRIZ

• What we think we obtained by studying TRIZ/USIT

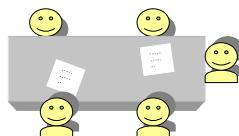
- A record of the discussion on Feb. 1, 2006 just before the graduation -

• Case Studies of our Applying TRIZ/USIT to Everyday-life Problem Solving



What we think we obtained by studying TRIZ/USIT

- At first we did not have much interests in it; we started to learn it without knowing what it is (except the information in the syllabus).
- By the experiences of practices of solving problems, we have been attracted with TRIZ little by little.
- **TRIZ thinking:** In my everyday life, when I meet some problem, I now find myself trying to analyze the problem and to figure out solutions.
- **Confidence:** Though I was poor at making ideas, I now feel that I myself is able to think of something new.
- **My impression of TRIZ** was not so good at first, but it turned out to be much different and much better.



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• Collaborative Thinking:

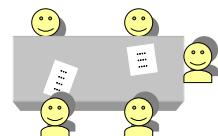
I have found that rather than thinking alone, thinking in collaboration with my Seminar group members brings us new findings and new ideas and hence much better solutions.

• Thinking consciously:

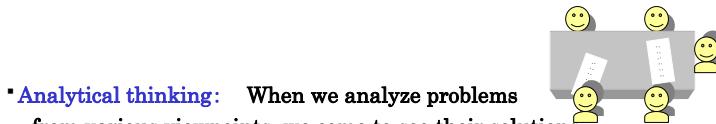
I am interested in analyzing problems and finding solutions with explicitly applying the thinking methods which we were usually not aware of.

• Novel method:

It is interesting that TRIZ has studied 'how to invent' and has systematized the ways of thinking.



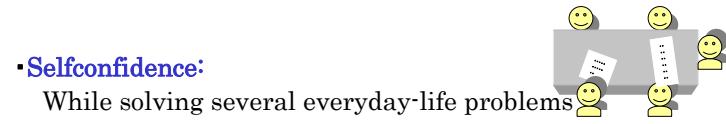
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- Analytical thinking:** When we analyze problems from various viewpoints, we come to see their solutions. Thinking in Space and in Time we did much vaguely before, and now learned to do it more logically.
- We have noticed that thorough analyses are essential for problem solving.
- Ideas have come up to my mind more often than before.**
- The experiences of studying to solve a number of problems have led us to find solutions of different problems.

I feel envious when I watch on TV that somebody invented a nice method to do something, because I could also have found that solution by using TRIZ. Finding a good problem is most important, I learned.

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- Selfconfidence:** While solving several everyday-life problems in the seminar, I really feel the improvement of my capability of problem solving.
- Golden Eggs:** Apparently ridiculous ideas and images of ideality are the eggs of gold, I realized, which we should warm and hatch for ourselves individually and in group.

By solving every-day life problems with TRIZ/USIT, we became familiar with TRIZ and received the influence of TRIZ on our own life style, feeling it pleasant and interesting.

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Advantages and Limitations of Studying TRIZ in the Universities



Advantages:

Having (enough) time to study,
Possible to master the basics of TRIZ
by encouraging interests and
by removing the initial impression of being difficult.

Limitations:

Even though possible to challenge a number of problems, it is often impossible to really make prototypes and examine the solutions due to lack of technologies and practical environment. (Especially in Faculty of Informatics we do not have a machine shop.)

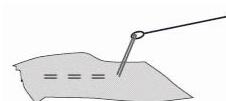
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(by Tsubasa Shimoda (2006))

Thesis Works: Applying TRIZ/USIT to Everyday-Life Problems

(1) How to Fix a String Shorter than the Needle

Problem: In sewing, we often make a mistake of sewing too much and the string left is too short for making a knot in a standard way. Consider how to fix a string shorter than the needle.



Considering the process of sewing

→ Some solutions at each stage (Utilization of Time characteristics)

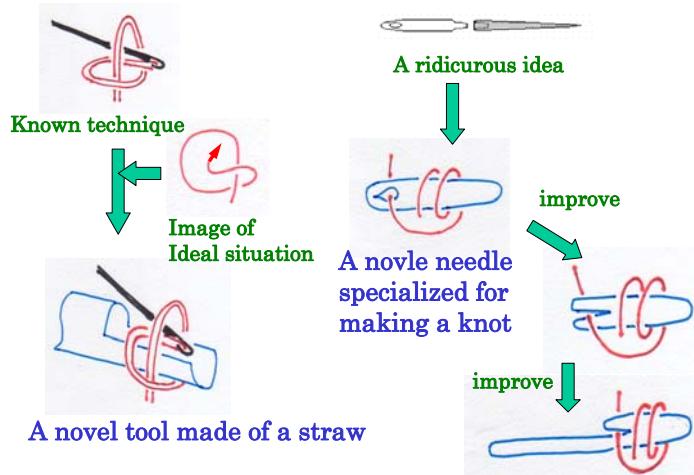
Root Causes + Constraints we take granted

→ Once we overcome a constraint, we can find novel solutions.

The string left is shorter than the needle.

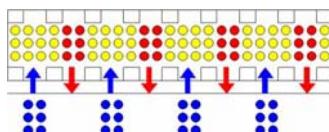
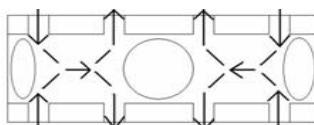
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By analyzing functions, attributes, time, space, and ideality, we have generate various ideas and constructed solutions.

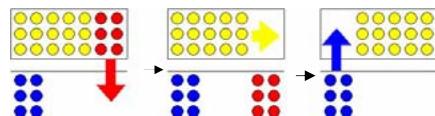


Solutions: Separating the flows of IN and OUT and making the people' flow in one direction.

==> Set the doors for IN ONLY and for OUT ONLY.



Delayed opening of the IN ONLY doors:
Schematic:



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(by Mizuo Omori (2006))

Thesis Works: Applying TRIZ/USIT to Everyday-Life Problems

(3) Trains for getting on/off smoothly

Problem: In crowded commuting trains, the middle part of the train is not much crowded, whereas people stay crowded near the doors and thus getting off and getting on the train are not smooth. Is there any way of improving the situation?



Thus,
the key is
"Flow of people"

Video recorded at JR Osaka Station.
Arrows show the flow of people.

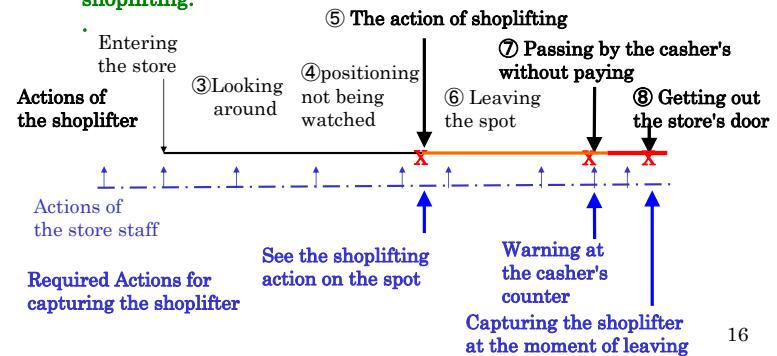
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(by Naoya Hayashi (2006))

Thesis Works: Applying TRIZ/USIT to Everyday-Life Problems

(3) How to Prevent from Shoplifting in a Bookstore

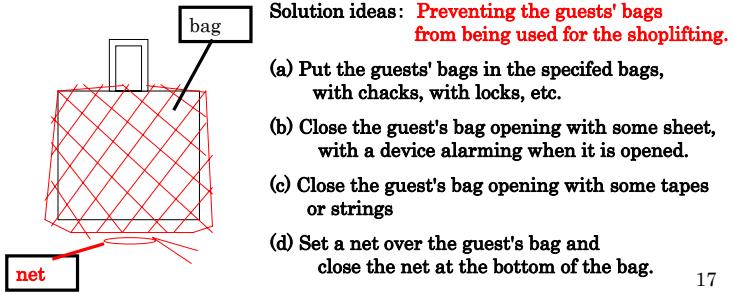
Problem situation: At a small bookstore for which the author was working part-time, the profit of sales is completely lost due to shoplifting.



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Difficulties at the Heart of the Problem (Root Contradictions):

- (1) The store staff must see the Three Moments ⑤⑦⑧ of criminal actions and capture the criminal at the moment of his leaving away.
- (2) The timings and places of the Three Moments can be chosen by the shoplifter's will and decision.
- (3) Before capturing the Three Moments on the spots, the store staff must handle any person as their 'Guests'.



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"TRIZ Home Page for Students by Students"

<http://www.osaka-gu.ac.jp/php/nakagawa/TRIZ/TRIZ-st/index.htm>



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Graduated in March, 2006 (Photo taken on the day of Graduation Ceremony)

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