



Keys

PD = Problem definition

H = Heuristics

T = Theory

M = Metaphors

This is a test of keying mini-lecture content – a suggestion by Australian reader Shahid Ahmed, to whom I'm grateful for the suggestion. What do you think?

U-SIT And Think News Letter - 67

Unified Structured Inventive Thinking is a problem-solving methodology for creating unconventional perspectives of a problem, and discovering innovative solution concepts, when conventional methodology has waned.

Dear Readers:

- . In this issue of the USIT and Think News Letter I digress to share with you comments by John Dunbar on the computer keyboard project. His comments are insightful, educational, and demonstrate how ideas spark ideas. If you are not familiar with the RSS Internet feeds he mentions, check out this URL: www.palinet.org/rss/toti/tsstutorial.htm
- . **HELP** I'm searching for problem solving methodologies that advocate no filtering of ideas (or delay of judgment). Know any? References please.

Mini USIT Lecture – 67 Heuristics for Solving Technical Problems

Comments on “The Intuition-Logic Struggle”

[H] Five heuristics

Five effective heuristics for creating new viewpoints and sparking creative thinking:

1. Simplify
2. Minimize objects to two.
3. Analyze a single point of contact.
4. Critique criticism
5. Ideas lead to ideas

[PD] Problem start-up

The current problem on computer-keyboard design, begun in NL_63 as the struggle between intuition and logic, emphasized heuristics (2) and (3) and succeeded in producing leaps of intuition. (See Feedback below.) I hope you had the same experience as you listed ideas that came to your mind while reading the mini-lectures.

[T] How can this work? How can eliminating objects still produce broad ranging solution concepts including system-type ideas? My interpretation of this phenomenon is that the initial process of

- amassing problem-situation information,
- identifying and selecting a single unwanted effect,
- reducing information by organizing and selecting relevant material,
- minimizing objects to two, and
- analyzing a single point of contact,

is an intense procedure of rationalization and memorization. We are making a transition from the problem situation to a single problem based on our wealth of experience, training, and determination to simplify. In this process we immediately increase our memorized database of

experience and overview of the problem situation. This is the raw material the subconscious ponders while the conscious performs logical procedural steps of analysis to understand a problem.

[M] Throughout the ensuing logical treatment of the problem the subconscious is actively solving the problem with a different protocol, one that allows seemingly illogical association of objects, whimsical features, and broad interpretations of metaphors in the problem statement. The result is the subconscious constantly interrupting the conscious with intuitive leaps of insight not logically evident to the conscious. The subconscious is not logically bound to two objects and a single point of contact, but (by now) the conscious is. As the conscious is rationally analyzing the minimal situation, it is experimenting with words and images. These are metaphors for subconscious inspiration.

Feedback

Ed,

I was reading U-SIT - 66 when I considered item 20 regarding inlay key tops (to have miniature digital screens) when out jumps the internal "constructive critic" that whispered "won't work, there's too much pounding (stress, vibration) on the key tops. There will be LED failure." I quickly recognized the internal critic and realized that this was not the time to critique new ideas. So I dismissed the objection and read on a few more of your points.

But then I recalled an image of inlay key tops with their flashing lights and at the same time recalled my internal critic's objection. From there I immediately thought of using the wasted space that you earlier talked about in the same newsletter. I then imagined turning the keyboard casing tops into one (or several) miniature digital screens. This would eliminate the pounding issue. When I later read your items 34 - 37 of specific things that could be put on the keyboard screens, I thought my idea was somewhat confirmed and then leapt to another idea of moving the Windows System and Taskbar items down to the keyboard. There's lots of fighting over screen real estate (particularly along the bar that runs across the bottom of Microsoft's operating system). Much of this could be minimized. From this, another idea appeared: why not use RSS feeds from the internet to drive keyboard advertisements or data feeds (stock prices, etc). Then I thought this also might be a solution to internet popups, as browsers could send pop-ups to the keyboards.

So, all of this led to a question: Can suppressing critical thoughts during brainstorming actually lead to more, or better, ideas. I ask this question because the essence of these ideas relied on getting around the stress factor that I perceived early in the intuitive brainstorming process. Should the critic be encouraged early in the process and milked for new ideas before any formal processes are started?

Keep up the great work. I didn't think your keyboard project would end up so interesting.

John Dunbar

John,

Your very perceptive introspection regarding reactions to computer keyboard ideas is most interesting. I would like to react to your comments and then get your permission to publish both in a future USIT and Think Newsletter.

“Constructive critic”

When the “constructive critic jumped out and whispered won’t work”, I thought, I know John Dunbar although we have never met. He shows the markings of a highly trained, practiced, sophisticated engineer or scientist. I recognize these markings as tattoos of membership in an elite club. Our motto is, “Don’t believe anything you hear or read until you have critiqued its plausibility with respect to your own knowledge.” I’m in the same choir and sing the same song. This is a valued trait that enables us to unravel semi-truths to nurture and grow our understanding of the world. My practice is a hindrance to my creative thinking that I constantly battle – more on this later.

“Too much pounding (stress, vibration) on key tops.”

This is an insightful criticism that can detour one’s continuation of reading or inspire further creative thinking (e.g., by critiquing the criticism). When I saw the words, pounding, stress, and vibration, I thought, aha, a chance for developing new materials – a creative motivation for materials scientists.

In teaching creative problem solving we commonly disallow filtering of ideas (criticisms). It’s an ideal that I’ve never succeeded in mastering. So I have a requirement to criticism: I try to practice the idea of never criticizing an idea that I can’t improve or extract a new idea from – ideas lead to ideas.

“Turning the keyboard casing tops into one (or several) miniature digital screens”

A great idea to be followed with more interesting leaps of intuition.

“Moving the Windows System and Taskbar items down to the keyboard”

I really like this one. I’ll be first in line to buy one.

“RSS feeds from the internet”

This is another excellent idea and a good demonstration of how ideas lead to ideas.

“Can suppressing critical thoughts during brainstorming lead to more, or better, ideas?”

The more I practice problem solving the more I move away from the dictum of “no filtering allowed in creative thinking”. As I indicated in the beginning of this response, critical thinking is what we are trained to do. To squelch it is unnatural. So let’s deal with it as an asset in creative thinking. However, it is worth teaching to awaken students to our bent for criticism and how it can detour us from creative thinking.

The value of critical thinking in USIT is demonstrated every time we construct a plausible root causes diagram – it is built from rational thinking of phenomenology. To deal with it, make every criticism constructive with creative follow-on ideas of improvements. Thus, criticism at any time during problem solving can produce more solution concepts.

On the question of better solution concepts I do invoke the dictum of no filtering. To answer the question of *better* you must have in mind filters by which you can judge among solution concepts. I see no value in filtering concepts during creative problem solving – ideas lead to ideas. Such judging has its proper role in selecting ideas to pursue into engineering.

“Should the critic be encouraged?”

The critic is an innate presence in our professional psyche as trained technologists. Encouraging

his/her input is not an issue, but getting the most out of that input is. Milk it for all you can.

Thanks for your comment on the keyboard project being interesting. I did not know how the project would turn out and didn't worry about it. I try to attack problems in real time (so to speak) during USIT classes and in writing the mini-lectures. I don't want to know in advance how they will come out. I am fascinated with how we can seed our subconscious and find intuitive leaps of insight. Each new idea is a marvel as a problem progresses. Your feedback is very valuable to me and to others. Seeing how different minds cultivate the same metaphors in a problem definition is fascinating and educational.

Thanks too, for allowing publication of this communication. Ed

Papers and essays

The following materials can be accessed by clicking on their titles. Links are also available on the USIT website (www.u-sit.net/Publications)

1. [“Injecting Creative Thinking Into Product Flow”](#)
2. [“Problem Statement”](#)
3. [“Metaphorical Observations”](#)

Other Interests

1. Have a look at the USIT textbook, “Unified Structured Inventive Thinking – How to Invent”, details may be found at the Ntelleck website: www.u-sit.net (*Note*; not at www.ic.net)
2. USIT Resources Visit www.u-sit.net and click on Registration.

Publications	Language	Translators	Available at ...
1. Textbook: Unified Structured Inventive Thinking – How to Invent	English	Ed Sickafus (author)	www.u-sit.net
2. eBook: Unified Structured Inventive Thinking – an Overview	English	Ed Sickafus (author)	www.u-sit.net
	Japanese	Keishi Kawamo, Shigeomi Koshimizu and Toru Nakagawa	www.osaka-gu.ac.jp/php/nakagawa/TRIZ/
	Korean	Yong-Taek Park	www.ktriza.com/www/usit/register_form.htm
“Pensamiento Inventivo Estructurado Unificado – Una Apreciación Global”	Spanish	Juan Carlos Nishiyama y Carlos Eduardo Requena	www.u-sit.net
3. eBook “Heuristics for Solving Technical Problems – Theory, Derivation, Application” -- HSTP	English	Ed Sickafus (author)	www.u-sit.net
“Heurísticas para Resolver Problemas técnicos – Teoría Deducción Aplicación”	Spanish	Juan Carlos Nishiyama y Carlos Eduardo Requena	www.u-sit.net
4. U-SIT and Think Newsletter	English	Ed Sickafus (Editor)	www.u-sit.net
	Japanese	Toru Nakagawa and Hideaki Kosha	www.osaka-gu.ac.jp/php/nakagawa/TRIZ/
	Korean	Yong-Taek Park	www.ktriza.com
Mini-lectures from NL_01 through NL_64	Spanish	Juan Carlos Nishiyama y Carlos Eduardo Requena	www.u-sit.net click on Registration

Please send your feedback and suggestions to Ntelleck@u-sit.net and visit www.u-sit.net

To be creative, U-SIT and think.