

# A Methodology for Problem Solving Using the Viewpoint of ETT Theory

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**Abstract:** A problem-solving methodology is proposed, utilizing the viewpoint of Equivalent Transform Thinking (ETT) Theory that can bring about a kind of paradigm shift. The theory was advocated as a principle of creativity by Dr. Kikuya Ichikawa in 1955 when he was an assistant professor at the department of electrical engineering of Kyoto University, Japan, after his investigation and analysis of the past discoveries and inventions. Many of Ichikawa's papers for the creativity were published at the Creativity Research Workshop held by Dr. Hideki Yukawa, who was a professor at Kyoto University and also the winner of 1949 Nobel Prize in Physics. Dr. Yukawa called the Ichikawa's theory as "Identification Theory" in his own words, and highly praised it. In this lecture, we emphasize that the viewpoint of ETT Theory is very useful not only for new technology invention but also for problem solving in the sense that appropriate equivalent viewpoint can simplify the problem to be solved. In addition, in order to clarify the effectiveness of the viewpoint, we show some problem-solving examples such as the problem of combined resistance in electrical circuit and that of parameter estimation in compartment model.