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TRIZ-Based Approach for Creative Problem Solving using Augmented Reality

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ABSTRACT

Solving the problem with TRIZ became more opportunity to the people to reduce the harmful and cost. Most of the TRIZ users hard to use it, because of the number that TRIZ's principles have was huge. It was impossible to learn it within a little time. Therefore, this project provided the problem statement for the beginners, and they needed to try solving the problem with TRIZ technique. This project is how to assist the beginners to use the TRIZ techniques to solve their problem. Several Inventive Principles such as nested doll, flexible shell and thin film and, color changes used to solve the problem. The series of useful tools, methods and strategies for solving the inventive problem systematically by using the mobile application. This project used the Augmented Reality to make the beginners easily interact with the application while solving the problem. By user testing, most of them satisfied with the effectiveness of the application that gave them a creative idea to solve the problem while its can made low cost to solve it. It founded that this application has satisfied 20% of 10 peoples from the questionnaire. Therefore, this application helped user to practice their basic TRIZ knowledge and using the TRIZ's technique effectively and efficiently by solving the problem given.

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CHAPTER 1

INTRODUCTION

This chapter presented the main idea of this study. It also discussed the problem statement, objectives, scopes, significant and conclusion of the project.

1.1   Background of Study

TRIZ was stand for the "Theory of Inventive Problem Solving" which was a Russian acronym that developed by Genrich Altshuller (Nakagawa, 2011). It was a modern theory considering engineering problem and suggested a solution founded on their built-in structures (Rao, Selladurai, & Saravanan, 2009). TRIZ's methodology was a very powerful, it based on realistic data to provide the concept of the solution for a broad scope of technological and non-technological problems (Nakamura, 2001).

Most of the people especially who was operating in a big company would wished to apply TRIZ to solve their problem. From the study of Ilevbare, Probert and Paul (2013) said that the benefit of TRIZ was reducing the price of resource inputs and reducing the harmful functions. Therefore, TRIZ helped the users to obtain quick and cheap solutions with TRIZ and assisted them to turn harm into good. TRIZ was made effective teamwork that provided a structure thinking that used in a group. Then, TRIZ helped the teams function together to apply their mind power and experience, enhanced by the knowledge of TRIZ instruments.

According to Dobrusskin, et al (2011) at Samsung, after six months TRIZ provided the first real results of its diligence on an industrial project in 2001. It got 120 hours for Samsung provided the educational forms to prepare experts