

WRASP: A NEW DIMENSION OF PHYSICAL FACILITY FOR TEACHERS IN EDUCATION

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ABSTRACT

Dealing with whiteboards is a teacher's daily job despite the growth of technology. However, marker stains on the whiteboard from the previous lesson make the whiteboard become heavily stained and ghosting. Hence, WRaSp with three functions; write, erase and spray has been invented specifically to clean old marker stains or permanent markers on a whiteboard. It is also used to reduce the number of items carried by teachers to classes and ensure the cleanliness of the case from marker residue. A few prototypes have been created and trials have been done in KMPH itself. Number of sharing sessions had also been done with colleagues in KMPH and other agencies. WRaSp also has been highlighted in a few innovation competitions such as KKi'19, iTREX, InIIC series 2 and 3iDC. WRaSp has obtained its copyright and Industrial Design (ID) from Intellectual Property Corporation of Malaysia (MyIPO). We received positive feedback from various users including lecturers in KMPH and other agencies. 100% respondents agreed that WRaSp really facilitates TnL and expressed their willingness to use WRaSp. In a nutshell, being able to produce this innovation that can facilitate TnL sessions by creating a pleasant condition for both teachers and students is a huge success for us.

Keywords: whiteboard, education, marker, erase, spray

1. INTRODUCTION

Dealing with whiteboards is a teacher's daily job despite the growth of technology that has been implemented in the classroom. Most of the time, the whiteboard is heavily stained and ghosting due to marker ink residues that deposited on the surface. This situation forces teachers to carry many items including eraser, fiber cloth and whiteboard cleaner spray. Hence a tool should be invented to overcome this situation to help teachers in creating a pleasant condition in the classroom. That particular device must have the ability to erase tough marker stains on the whiteboard, able to reduce the number of items carried by teachers to classes, being able to ensure the cleanliness of the case from marker residues and can be produced at low cost.

2. METHODS

WRaSp innovation project implemented 5 stages of Design Thinking Process [1] in developing this innovation. This methodology is an approach to provide solutions to every problem that arises. First stage is empathy. By being in the user's shoes, identification on teachers' prominent problems has been done. Then the brainstorming method, affinity diagram, force ranking analysis and SMART analysis has been implemented. Main problem was then being analyzed further using the 5W+1H approach. Second stage is defined. This project was selected due to the organization's mission to create a conducive environment in classes by implementing and enhancing the creativity and innovation which parallel CTI-PCI initiative in

11th Malaysia Plan [2]. During the third stage which is ideate, S.C.A.M.P.E.R was applied. Existing product was substituted with a new one, combine 3 products to 1, adapting product with current situation, modify product to be multipurpose, put to other use as it can be used in various institution, eliminate as no need to buy many items and lastly rearrange as the product can be used in numerous situations. Fourthly, the prototype of this invention has been developed and tested at various institutions.

2.1. Prototype and testing

Group members went through numbers of meetings and discussions in order to come out with this invention. Several prototypes and trials have been done in KMPH and other agencies. The process of upgrading was conducted based on previous or existing problems. Finally, the final prototype was printed using a 3D printer, based on 3D modeling that had been developed. This prototype showed a promising result based on the third trial.

3. FINDINGS AND ARGUMENT

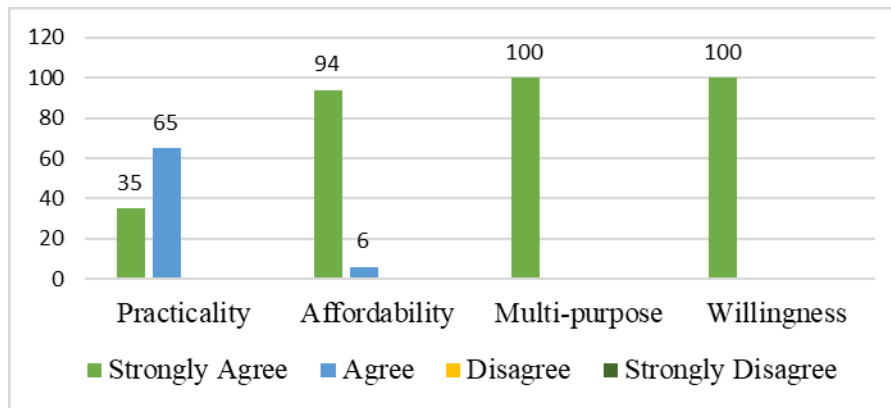


Figure 1. Analysis on user's feedback about WRaSp based on percentage

A survey has been conducted to find people's opinion about WRaSp (**Figure 1**). For the first item, 35% users were strongly agreed while 65% agreed that WRaSp is very practical due to its pocket size and easily stored. Small pencil case is enough to keep this item. It is also practical as it is designed ergonomically to be held by hands. Being reusable is very cost effective and affordable, and this was strongly agreed by 94% of the users and 6% were agreed. Liquid cleanser that comes from household detergent which is the best cleansing tool to be used [3] is refillable. This condition can save a huge sum of money in purchasing cost. All respondents strongly agreed that this multipurpose device helps teachers in classes. This all-in-one item helps teachers to eat less every day. Being small in size with minimal finishing but with powerful ability is a dream come true. All respondents showed their willingness by strongly agreeing to use WRaSp in their classes. They strongly believe that this item was able to obliterate hassles that they faced all these while in every TnL session specifically on related to whiteboard such as smudging of ink and ghosting.

4. CONCLUSION

Helping teachers to create a pleasant TnL session in classes is our key intention. After going through various hardships from designing and upgrading the prototype, to trial and sharing sessions, everything was paid off. Simple and minimal tool that gives a huge impact for teachers is our main intention.

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Surat kami : 700-KPK (PRP.UP.1/20/1)
Tarikh : 30 Ogos 2022

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