

# Development of Information-assisted Problem-based Learning System in Smart Classroom Environment for Critical Thinking Skill Development.

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- **Abstract:** The study aims to develop the Information-assisted problem-based learning system in a smart classroom environment for critical thinking skill development. The sample in this study was 30 staff purposively sampling from an industrial robot control department who participated in robot arm control courses. The duration of the study is four weeks. The statistics used in this study were means, standard deviation, and t-test. The study found the following. (1) The synthesised framework consists of the following parts, problem-based learning, Information-assisted problem solving, smart classroom, and critical thinking. (2) Model of Information-assisted problem-based learning system in a smart classroom environment for critical thinking skill development consists of seven steps: problem identification, understanding and goal setting, planning, data gathering, experiment, conclusion, and evaluation, respectively. The smart classroom components in the study were synthesised as follows, 1) interactive classroom, and 2) learning management system via a network. (3) The learning system developed consists of hardware used for interaction between students and teachers and between students and learning contents. (4) Results of the study found that the participants were evaluated to have a critical thinking level of pre-test mean equal to 21.73, the standard deviation of 3.16, and post-test mean equal to 28.03, the standard deviation of 2.01, which is higher than the post-test at the statistical significance of .05.
- **Keywords:** Problem Based Learning, Big Six Skill, Smart Classroom, Critical Thinking