

# **Development of a Research Project-based on Level of Inquiry (RPLI) Learning Model in Science Education to Improve Creative Thinking Skills and Digital Science Worksheet Design Skills in Pre-service Elementary Teachers**

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## **ABSTRACT**

Education in the Industrial Revolution Era 4.0 is a challenge for Education Personnel Education Institutions (LPTK) to produce prospective elementary school teacher graduates who are creative and skilled at designing digital learning tools. This research aims to develop a Research Project-based Learning Model on Level of Inquiry in Science Education at Pre-service Elementary Teachers. The novelty of the research, namely project-based learning, was developed with the integration of a research-based learning model to accommodate LoI to adapt to students' intellectual development and the learning control center. Apart from that, the model was developed not only for creative thinking skills, but also for digital science worksheet design skills. The research used the Borg & Gall development research approach which was carried out over two years. The first year aims to find a prototype of the RPLI learning model through preliminary studies and model validation. The subjects of this research consisted of lecturers, UNS and UMS students. Data collection techniques used questionnaires, observation and interviews. The data analysis technique was carried out qualitatively. The research results show that the Research Project-based Learning Model on Level of Inquiry then given the name Research Project based Learning (RPBL) has the syntax consisting of orientation, analysis, design, partnership, revision, reflection. The RPBL learning model is equipped with RPS, learning modules, Student Worksheets (LKM), creative thinking skills assessment sheets, and HOTS science LKPD development skills assessment sheets which are valid according to experts with a Kappa coefficient of 0.815 indicating a very strong level of agreement between experts. The first year's output achievement was an article in a Scopus Indexed International Journal (which was accepted) in Pegem Egitim ve Ogretim Dergisi (ISSN: 2148-239X) with the article title "Profile of Pre-service Elementary Teacher Creativity in Developing Higher Order Thinking Skills- oriented Science Worksheets". The second year's activity plan is to test the model through limited testing, extensive testing and operational testing to obtain the practicality and effectiveness of the model being developed.

**Kata Kunci:** *Creative thinking skills; digital science worksheets; level of inquiry; project-based learning; research based learning*