

# **Strengthening the Competence of Science Teachers Through Science Learning Workshops Based on Technological Pedagogical Content And Knowledge (TPACK) to Support Implementation Independent Curriculum**

**by Purwanti Widhy Hastuti, Insih Wilujeng, Susilowati, Rizki Arumningtyas**

## **ABSTRACT**

Digitalization and artificial intelligence dominate all human lives that change human civilization today in the Era of Society 5.0. The concept of Society 5.0 is a refinement of previous concepts, where society 5.0 uses modern technology that relies on humans as its main component. Many challenges will be faced, one of which is in education related to human resources. Teachers must be technology literate to develop a learning process that still activates students to practice the skills needed. In addition, teachers need to ensure that students have literacy skills (numeracy, science, information, financial, cultural and citizenship), so teachers need to strengthen pedagogical and professional competencies to be able to do learning well. Teachers need to improve their competencies, especially professional and pedagogical competencies. This will affect the learning process carried out by the teacher. The ability of a teacher is not only to develop Pedagogical or Content skills in learning, but teachers must also be able to use technology so that learning is in line with the times. This is because technology plays an important role in the present and future. In line with this, the implementation of the independent curriculum is still constrained. To overcome this, teacher creativity is needed in designing lessons that support the implementation of an independent curriculum and are in accordance with technological developments. This condition requires that teachers must be able to master and develop their technological abilities. Teachers must be able to utilize existing technology in order to make the learning process enjoyable for students. The ability to use and develop, especially in technology-based media, is contained in the Technological Pedagogy Content And Knowledge (TPACK).

This DKL activity was carried out with the aim of training teachers to design TPACK-based science learning to support the implementation of the independent curriculum. DKL activities are carried out by means of tutorials (virtual face-to-face / face-to-face), workshops, structured assignments, and consultations with the following details. Tutorials and workshops, namely the delivery of material (a) strengthening the independent curriculum, b) the concept of TPACK, c) integration of TPACK in learning, d) Integration of technology in learning. Task consultation, namely consultation via email / WA / HP, especially for trainees who have difficulty completing structured assignments and evaluation activities through questionnaires, observation and mentoring. The results of this activity are 90% of DKL participants have developed TPACK-based lesson plans. Participants are able to identify technology that is integrated in learning.

*Kata Kunci: Teacher competency, TPACK, science learning*