

PERCEPTION OF IN-SERVICE CHEMISTRY TEACHERS OF HIGH SCHOOL AND VOCATIONAL SCHOOL IN DIY TOWARDS THE INTEGRATION OF SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM) IN CHEMISTRY LEARNING

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ABSTRACT

This study aims to: (1) analyze the prior knowledge of chemistry teachers in SMA and SMK; (2) analyzing the perception category of SMA and SMK chemistry teachers; (3) to analyze the different perceptions of high school and vocational high school chemistry teachers in DIY on the application of Science, Technology, Engineering and Mathematics (STEM) in chemistry learning. The main output that is the target of this research is a Scopus indexed proceeding article as well as an illustration of the readiness of teachers to STEM integration in the chemistry learning process in SMA and SMK. This research was designed and carried out as a descriptive study with a survey method. The samples used in this study were high school and vocational high school chemistry teachers in Yogyakarta, especially Sleman and Bantul (SMA Chemistry Teacher: 82 and SMK Chemistry Teacher: 49). The sampling technique was carried out at a convenient sampling. The data collected in this study were the perception data of the chemistry teachers in SMA and SMK in DIY on STEM integration. Data were collected using non-test techniques in the form of a questionnaire with open and closed questions. Open Questions Chemistry Teacher's Initial Knowledge of STEM (PTPA-STEM) includes 7 open questions. The Questionnaire for Chemistry Teachers' Perceptions of STEM (PGK-STEM) used consisted of 54 closed statements. Open questions aim to determine the initial knowledge of SMA and SMK chemistry teachers related to STEM. As for the closed statement, it aims to analyze the perception of STEM and is divided into aspects of the basic concept of STEM, the urgency of the STEM approach, STEM integration, and STEM implementation factors. Qualitative descriptive techniques, descriptive statistics, and the Kruskal Wallis test were used to analyze the data obtained from the PTPA-STEM and PGK-STEM questionnaires. The results showed that the majority of high school and vocational high school chemistry teachers in DIY already knew about the basic concepts of STEM in chemistry learning but still needed to be improved, especially in the example of STEM implementation in certain chemical materials. High school and vocational high school chemistry teachers in DIY also have a dominant perception of the very good category. However, there is no significant difference regarding the perception of chemistry teachers in SMA and SMK in DIY towards STEM. High school and vocational high school chemistry teachers have a very good majority perception category. Therefore, high school and vocational high school chemistry teachers in DIY need to increase their knowledge regarding the application of the STEM approach through training activities, workshops, or reading journals before implementing STEM in chemistry learning.

Kata Kunci: *STEM integration, perception, in-service chemistry teachers, exploration, comparison*