

# DEVELOPMENT OF ONLINE LEARNING MATERIALS AS A SHOP-TALK SUBSTITUTE IN TRAINING OF GRINDING MACHINE OPERATION

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## ABSTRACT

The Grinding Machining course, the main learning activity is training to operate a grinding machine. The learning objectives include; cognitive aspects, namely the concept of operating a grinding machine; and performance aspects, including the performance of compiling a work preparation sheet (WPS), and the performance of operating a grinding machine for the manufacture of a product. However, the COVID-19 pandemic requires that learning activities for Grinding Machining courses conform to social distancing policies, so that they are carried out with distance learning. The objectives of this research are; (1) obtain online teaching materials as a substitute for grinding machine shop-talk, which includes self-study materials, and grinding machine operation video tutorials; (2) testing the feasibility of teaching materials for Shop-talk substitution for grinding machines, and (3) testing the effectiveness of teaching materials for shop-talk substitution for grinding machines. The study was conducted using a Research and Development (R&D) approach adopting the media development model of Yoshikawa (2010) which has been modified by Plomp (2013). The research step consists of three stages, namely; Preliminary research; Development or Prototyping; and Assessment. The subjects of this study were students of the Mechanical Engineering Education Department, Faculty of Engineering, UNY, who in the even semester of 2020/2021 took the Grinding Machine course, totaling 39 students. Product feasibility data was collected using a questionnaire, while product effectiveness data was collected using multiple choice tests and performance tests to compile WPS. Data analysis was carried out by descriptive analysis. The results show: (1) online teaching materials have been compiled for substitution of Shop-talk grinding machines, (2) the feasibility of teaching materials based on the validation results of material experts, namely Grinding Machining lecturers, is 4.48 including the very feasible category. (3) the student response as an assessment of product users is 4.42 including the very feasible category, and the average test score for compiling the WPS is 78. A total of 34 out of 39 students (87.2%) were able to achieve the minimum learning material mastery criteria.

Kata Kunci: *teaching materials, shoptalk, grinding machine*