Developing Competency Assessment Instruments for Brake System Maintenance and Repair Certification

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ABSTRACT

The main objective of this research is to develop a competency test instrument for the Brake System Maintenance and Repair scheme as well as to determine the level of its feasibility, validity, and reliability. This study was carried out as part of mutual collaboration between the Department of Automotive Engineering Education, Universitas Negeri Yogyakarta with the Indonesian Automotive Certification Institute (LSP OTOINA). One of its goals is to develop a set of competency assessment test schemes for junior mechanics based on functional occupation in both the service and the manufacturing automotive industry.
This study was conducted based on The Borg and Gall model research and development approach adaptation. It was simplifying the Borg and Gall model into three stages, namely: first: product planning, second: a limited trial which included Preliminary activities, Field Testing, and Main Product Revision, and third: main field testing followed by the production of assessment, until the final product revision is obtained.
The results of this research and development are a set of assessment instruments for competency certification of the Brake System Maintenance and Repair scheme consisting of 4 forms, namely: FR.IA.01, FR.IA.02, FR.IA.02a, and FR.IA.03. Based on the assessment of 10 prospective assessors, the quality of this practical competency test instrument is Appropriate for Practical Use (x? = 3.78 out of 4), both in terms of material, construction and language aspects. The validity of the content of the instrument was tested by calculating the Aiken's V index, the total mean V value was 0.93 (more than V table = 0.75 for p = 0.04) which means it meets the requirements (valid). The reliability of this instrument was tested using the Interclass Correlation Coefficient (ICC) with the SPSS program, the ICC price of 0.514 was obtained with a significance of 0.03 (0.03 < 0.04) which means that based on an inter-rater assessment of 10 (ten) people this instrument is reliable, so it can be used.

Kata Kunci: *Instrument, Practical Competency Test, Brake System*