

Ethnography and Cognitive Task Analysis to Elicit Expert Knowledge in Perceptual-Motor Tasks*

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Abstract. This study aims to describe the cognitive demands associated with the tasks involved in car cosmetics repair using a combination of Cognitive Task Analysis (CTA) and hands-on training. CTA and hands-on training were combined to enrich the information in extracting expert knowledge in performing a perceptual motor tasks. During interviews, questions were used to elicit knowledge from a subject matter expert (SME). Four aspects of the job were thought to be necessary to meet the objectives: decision cues, inspection cues, techniques and possible errors. It was found that CTA guided the SME to narrate cognitive aspects not conveyed in the hands-on session. Although CTA proved to be a good method to complement hands-on experience in the analysis of this task, it was faced with some hurdles including language barriers and difficulty of conveying abstract concepts such as cognition. The results suggested that the use of CTA can accelerate the extraction of cognitive functions in ethnographic studies.

Keywords: cognitive task analysis, perceptual motor task, knowledge elicitation, ethnography

Abstrak. Studi ini bertujuan menjelaskan tuntutan kognitif yang berhubungan dengan tugas-tugas yang terkait dengan perbaikan kosmetis mobil dengan menggunakan kombinasi analisis tugas kognitif/*Cognitive Task Analysis* (CTA) dan pelatihan praktis/aktif. CTA dan pelatihan praktis dikombinasikan untuk memperkaya informasi dalam menggali pengetahuan ahli dalam melaksanakan tugas-tugas motorik perceptual. Selama wawancara, diajukan pertanyaan-pertanyaan untuk menggali pengetahuan dari ahli pokok masalah/*subject matter expert* (SME). Diperkirakan ada empat aspek dari tugas tersebut yang perlu untuk memenuhi tujuan: isyarat pembuatan putusan, isyarat pengawasan, teknik dan kemungkinan kesalahan. Ditemukan bahwa pedoman CTA membimbing SME untuk menarasi aspek-aspek kognitif yang tak terungkap dalam sesi-sesi pelatihan praktis. Sekalipun CTA terbukti merupakan metode yang baik untuk melengkapi pengalaman pelatihan praktis dalam analisis tugas ini, ternyata dijumpai beberapa kesulitan termasuk hambatan bahasa dan kesulitan mengungkap konsep-konsep abstrak seperti kognisi. Hasil-hasil menyatakan bahwa penggunaan CTA dapat mempercepat penggalian fungsi-fungsi kognitif dalam studi-studi etnografik.

Kata kunci: analisis tugas kognitif, tugas motorik perceptual, penggalian pengetahuan, etnografi

Cognitive Task Analysis (CTA) is a set of methods that attempts to characterize how people accomplish their tasks proficiently by identifying the cognitive skills needed for the job (Klein Associates

Inc., 2003; Klein, 1995). Applications of CTA have mostly centered on tasks that depend on cognitive aspects of expertise such as air traffic control (Seamster, Redding, Cannon, Ryder, & Purcell, 1993), ambulance

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