Computer-based instruction in traffic theory

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Abstract

Current methods of instruction in traffic theory fail to prepare students sufficiently for actual driving in every-day traffic. The relationship between theory and practice, with respect to content and presentation, is often too vague. To achieve transfer to practice, instruction in traffic theory should be based upon task and context analyses. Furthermore, the knowledge to be acquired should be presented in a functionally valid and interactive learning environment. Multi-media technology may provide the tools to create such an environment in a Computer Based Instruction (CBI) programme. This paper presents the psychological and instructional analyses for developing such a new programme.

Introduction

"Learning how to drive can only be achieved in practice". This statement is true for contemporary driver education in the Netherlands because prevailing methods of instruction in traffic theory focus on preparing the student for the theoretical exam, not to prepare for actual driving in every day traffic. The driving schools of the Royal Netherlands Army acknowledge the problem of insufficient transfer of theory to practice. They decided to develop a new (computer based) course in traffic theory that is truly preparatory to the practical part of learning to drive. Computer Based Instruction (CBI), utilising multi-media technology, may make it possible to realise that goal, provided that the instructional design and the application of the technology is grounded in a consistent theory of learning and a sound framework of instruction. The present paper reports the results of the psychological and instructional analyses underlying the CBI programme. First, the limitations of current driver education are discussed, followed by the adopted framework of learning. The next section reports on the analyses for determining the instructional material. Finally, the last section discusses the main issues concerning instructional design.

Limitations of Current Driver Education

A major drawback of current driver education is that there is little transfer of theoretical instruction to practical skills (Vermeulen, 1987). The reason for this situation is an inadequate philosophy behind instruction and the concomitant inappropriate selection of instructional materials and settings. This will be discussed below.