A FRAMEWORK FOR ADDRESSING END USER TRAINING NEEDS

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Although end user computing (EUC) training has been widely recognized as an important topic, very little published research has focused on identifying the limitations of current training protocol and/or developing innovative approaches to enhancing the productivity of computer users. This paper examines the efficacy of the Functional Job Analysis classification for designing EUC training programs.

The growth of end user computing has been one of the most significant information management developments of the 1980s (Benson, 1983). End user computing (EUC), the use and/or development of information systems by the principal users of the systems’ outputs or by their staffs (Wetherbe & Leitheiser, 1985), has diffused rapidly over the past two decades. This diffusion has generated substantial interest within the management information systems (MIS) discipline (Doll & Torkzadeh, 1989; Magal, Carr, & Watson, 1988; Rivard & Huff, 1988).

It has also created an unprecedented need for end user training (Magal et al., 1988). Studies by Mackay (1987), Hughes (1988), and Mykytyn (1988) support the proposition that software products are not easy to learn or use. They maintain that ease of use is highly dependent upon effective end user training.

This paper further develops the proposition that end users need training to use software efficiently and effectively. Specifically, the purpose of this paper is to apply a conceptual job analysis framework called Functional Job Analysis (FJA) to EUC training. FJA, based on a philosophy of hierarchical training from simple to complex, provides an approach which might improve end user training.

The paper is divided into the following five sections: (1) a review of the EUC training literature; (2) an overview of functional job analysis; (3) a description of the steps involved in using FJA to develop EUC; (4) implications for
EUC training and (5) defining the research agenda.

A Review of EUC Training Literature

Most of the past research conducted on EUC training can be characterized as exploratory or descriptive (Ein-Dor & Segev, 1988; Nelson & Cheney, 1987; Rivard & Huff, 1988). Sein, Bostrom and Olfman (1987) reported that little research has been conducted in the area even though the contribution of effective training towards the success of EUC has been acknowledged by both practitioners and researchers in MIS.

One important series of experiments focused on the effects of different instructional formats on learning (Carroll, Mack, Lewis, Grishkowsky, & Robertson, 1985; Carroll, Smith-Kerker, Ford, & Mazur-Rimetz, 1988). They reasoned that trainees tend to be overwhelmed by the numerous features available in an application software package and that novice users should only be presented with the full system after they have gained confidence in their ability to use the software (Carroll & Carrithers, 1984). They used the term “training wheels” to refer to the idea of restricting the number of computer software features available to beginners.

Another experimental approach to avoid inundating trainees with information was reported by Carroll et al. (1985). The researchers used a set of instructions designed to encourage “active” learning by the trainees. These software instructions were “guided exploration” cards which consisted of a goal statement, hints, checkpoints, and remedies for that card’s topic. Thus, users were presented with the minimal instructions necessary to complete the task.

These guided exploration cards evolved into what Carroll et al. (1988) called the “Minimal Manual.” The manual is based on the principle that novice users of application systems need to use a tool that they believe will help them do their own work. The manual specifically trains users in error recognition and correction. Users are expected to approach the learning task with considerable understanding of task relevant concepts and to be motivated to use the tool. The rationale for this approach is that training should make it easier for users to apply the knowledge they already possess in performing job-related tasks (Carroll et al., 1988).

Although the Minimal Manual was successful in increasing productivity compared to self-instruction manuals, neither method utilized a strategy of training users sequentially from the least complex function to the most complex function. An alternative method of training proposed in this paper entails adopting a hierarchical complexity approach of first training users to master simple commands before attempting the more complex commands (Fine & Wiley, 1971). Users who attempt complex procedures without having learned the simple commands may be less efficient in accomplishing their tasks.

The importance of organizing EUC training from the least complex to the most complex tasks has been documented by Mackay (1987). She concluded that novices should be trained to use simple functions before they attempt to learn more complex functions. The rationale is that an understanding of more complex functions is often dependent upon understanding simple functions that are used in a series of complex keystrokes.

Mackay and Lamb (1989) also concluded that EUC training based upon a hierarchical
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