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Jon A. Turner
New York University

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Computer Mediated Work: The Interplay Between Technology and Structured Jobs—Claims Representatives in the Social Security Administration

**Jon A. Turner
New York University**

ABSTRACT

Increasingly, office jobs at all levels are being redesigned to incorporate computer and communications technology. Yet, little is known about the extent of the changes in these jobs that are taking place or their consequences for workers and organizations.

In this study, the ways that the processing organization of application systems shape the content of structured work are investigated. More specifically, the following questions are asked:

1. To what extent is the perceived task environment (i.e., task characteristics and structure) of workers influenced by the form of an application system?
2. Are quality of work life outcomes, such as satisfaction or symptoms of mental strain, effected by the form of an application system?
3. Is worker performance altered by the form of an application system?

A model, centering on the information needed by workers for task execution, is used as the basis of an empirical test using a sample of 620 claims representatives in the Social Security Administration. Claims representatives conduct face to face and telephone interviews with the general public in order to assist them in completing applications and submitting all evidence necessary to establish their entitlement to Social Security benefits. The representative explains the claimants rights and benefits, and certifies the award for payment.

Although one application system is used to maintain claimant records, two different front ends provide access to the system. The advanced record system (ARS) is a serial processing interface that uses a teletype telecommunications network to transmit messages to a central processor for data access and file maintenance. SSADARS is a parallel interface that is on-line with CRT terminals for data entry and response. A representative is trained in one or the other system depending on the equipment available in the SSA office.

A questionnaire consisting of items designed to measure psycho-social factors of a job that represent potential stressors or stress moderators was used to gather data. The factors measured included task characteristics, workload, interface type and usage, as well as various outcomes including job satisfaction, strain symptoms, absenteeism and performance.

Three sets of data analyses were performed:

Univariate group comparisons—The users of the two interface types were compared on measures of perceived system, task, well-being, and workload factors.

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Bivariate associations—First order correlation coefficients were used to explore associations between interface type and measures of use, workload, task, and well-being.

Correlates of well-being—Job satisfaction, mental strain symptoms, and claim outcomes were regressed, in four separate stepwise analyses, on interface type and selected task, workload, and demographic factors.

It was found that, for one structured job:

1. The characteristics of the application system interface influence the interaction with clients, the perceived task environment and well-being of claims representatives.
2. That the use of an on-line system, in this situation, permitted reducing message preparation time, which in turn, allowed decreasing interview length and having a greater number of interviews per representative.
3. That task demands and problems increase for representatives using the on-line system.
4. That mental strain symptoms and absenteeism increase, and job satisfaction decreases for representatives using the on-line system.
5. That representatives using the on-line system were more likely to deny a claim and consequently to be involved in reconsideration or a hearing.
6. No difference was found in job level, interdependence among workers or with the supervisor, job discretion, or in the confidence workers had in data on the basis of the interface used.

These results are attributed to workers using the parallel on-line interface having a greater number of interviews per day and consequently interacting with more clients. It appears that in this situation, involvement with clients, with their associated problems and the resulting expenditure of emotional energy, is more detrimental to operator well-being than the frustration associated with a poorly performing system interface, even though total client contact time is the same.

The implication of this study is that the whole job must be considered when attempting to predict the consequences of using technology in a work setting. In this situation dealing with the mechanics of the technology was preferable to interacting with clients.