The Impact of Telework on Information Professionals' Work Processes

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Abstract

Telework is growing as an alternate work arrangement in both public and private sectors. Advocates of this new form of working claim that telework enhances employee efficiency and reduces work-related expenses, such as overhead for businesses and travel expenses for employees. However, alternate work experiments not only redesign the physical workplace, but also restructure work itself. The purpose of this study was to examine the impact of telework on the work done by information professionals. Through combined methods of participant observation, interviews, and diaries, the work of twenty pairs of teleworking and at-office library and information professionals, matched by job, was investigated. The study revealed that although teleworkers and at-office workers performed similar amounts of professional and clerical work, work processes differed between the two groups. Teleworkers were often missing the information and collegial interaction necessary to complete work tasks at home. As a results, teleworkers tried to cope by repeating parts of tasks at home and by dividing work tasks according to available resources. At-office workers often compensated for absent teleworking colleagues by performing additional work tasks or by helping teleworkers locate work-related information. These improvised means of working revealed that teleworkers in this study were not persons working alone with control over all aspects of their work.

1. Introduction

Telework or e-work is a way of working at a location remote from the usual workplace by using telecommunications technology. Although advocates of this new form of working claim that telework enhances employee productivity and

reduces work-related expenses, researchers have only begun to explore the ways in which telework affects people and their work lives. Research in this area has often focused on issues such as worker satisfaction and isolation. However, we should remember that alternate work experiments not only redesign the physical workplace, but also restructure work itself -- that is, they alter the day-to-day patterns of how, when, and where work occurs. The purpose of this study was to examine the impact of telework on the work done by information professionals.

2. Background

Two bodies of theory informed this study: role theory and deskilling/upskilling theory. In both cases, the division of work holds a central position. According to deskilling theory, the subdivision of work tasks means that workers need fewer skills to complete a job, thereby allowing employers to offer workers who have fewer skills lower wages to perform subsets of these work tasks. These less skilled workers continuously repeat one aspect of the work task, handing off to others who perform the next step in production. In this way, the work task becomes a series of smaller, routinized tasks. Proponents of upskilling, such as Attewell (1989), argue that reorganization of work around mechanization means that workers acquire new skills to use such machines as computers and are freed to spend greater amounts of time on problem solving instead of information gathering and processing. Some critics, such as Braverman (1974), Arronwitz and DiFazio (1994), Harris (1994), Mosco (1989) and Perrolle (1987), argue that the rearrangement of work through mechanization, such as computer technologies, actually reduces workers' control over work processes. As jobs are simplified or " deskilled," they are turned over to less skilled employees, thereby saving organizations the cost of employing workers with greater skills. Since telework, like computers, represents a reorganization of work, it may also change work flows. However, despite the potential for changes to work processes, telework, similar to the flextime arrangements which preceded it, presents a work option that appears attractive as a means of combining work and

family. Telework, however, also has the potential to create a situation in which workers may become self-employed, performing outsourced contractual and piece work, rather than full-time employees within an organization.

Role theory offers another means of understanding change to the work process. A role in an organization is a set of specific behaviours associated with an individual which are related to organizational goals and are needed at particular points in an organization (Cyert and MacCrimmon, 1968; Sarbin and Scheibe, 1983). These organizational roles may be either programmed or discretionary. Programmed roles, such as clerical and assembly-line work, consist of specific subprograms and constraints on the execution of the program, while discretionary roles allow a degree of variation and autonomy from the set program.

Advocates of telework suggest that teleworkers have greater freedom to spend longer, more concentrated periods of time on tasks associated with their discretionary roles, giving them greater opportunity to excel in a particular domain. However, teleworkers may divide the tasks they do between days spent at home and at the office. Although they can then enjoy blocks of time set aside for particular tasks, such as writing reports, they may also, in effect, split their job roles. In addition, the temptation to mix domestic and work roles encourages the worker to subdivide these roles further, in order to integrate all roles into a day's routine.

3. Research Questions

The potential changes in work processes associated with telework raise the following question: What is the impact of the reorganization of information work in teleworking arrangements on teleworkers' jobs? To this end, these issues were investigated:

1. Does routinization of information processing occur to a greater degree in work done by teleworkers than by at-office workers? As a result, does a greater degree of deskilling occur in work done by teleworkers than by at-office workers?

2. Do teleworkers perform different tasks from those performed by their at-office co-workers?

3. Do teleworkers make a discrete separation between tasks done at home and at the central workplace?

4. Method

The approach taken in this research was a multi-case study of twenty teleworkers and twenty at-office co-workers found through the snowball method and matched according to jobs. The number of participants in this study falls within the guidelines suggested by qualitative research experts, such as Miles and Huberman (1994), who recommend seeking a range of fifteen to thirty participants for this type of research. Unlike other case studies of deskilling which have used structured interviews and survey questionnaires alone, this study attempted to gain a closer view of telework through observation of teleworkers and their at-office counterparts in their respective work environments. Participants were observed on two occasions separated by approximately six months as they performed work tasks in their workspaces. Participants were interviewed about their daily work activities when observation was impossible. In addition, the researcher conducted semi-structured interviews to gather demographic data and information about participants' perspectives of their work. All participants were asked to maintain a diary about their work for a week to verify that the researcher had observed a typical work day during visits.

5. Participants

Teleworkers were split evenly between full-time and part-time teleworkers. Work done at home for one to three days each week was considered to be part-time telework. Participants who spent four or five days at home, that is eighty per cent or more of their work time, were considered to be full-time teleworkers. The twenty at-office workers worked in central office workspaces.

Since the circumstances of telework often vary according to the type of job taken home, this study focused on the work experiences of workers in LIS-related jobs, both in the private and public sectors. Although nine participants did not hold

library and information science degrees, all participants worked in library and information science-related jobs. Teleworking librarians in this study performed a variety of functions, such as administration, consulting services, and traditional library services. Nearly eighty per cent of teleworkers and at-office workers in this sample reported that they held staff-level positions in their organizations; the remaining participants occupied management-level positions.

The teleworking information professional was generally able to go home to work as part of a formalized organizational plan to use telework or a specialized plan to meet the needs of the individual. At-office workers were most often paid similarly to teleworkers, as salaried employees who earned $40,000 to $59,000 with additional overtime compensation. While at-office workers were divided between men and women and one-half had children, teleworkers were most often women who were married and had children living with them. This description of the teleworker as a salaried employee, often a woman married and with children, largely supports the usual descriptions in the literature of the white-collar teleworker.

6. Findings

Teleworkers in this study experienced change in their work processes as a result of missing information needed to complete work tasks.[1] At-office workers were also missing information; however, teleworkers resolved their information needs significantly fewer times than at-office workers. Teleworkers were able to resolve their information needs only about thirty-one per cent of the time, while at-office workers resolved their information needs approximately eighty-nine per cent of the time. In addition, teleworkers experienced reduced collegial contact in comparison with their at-office colleagues which contributed to lack of resolution of information needs. As a result of unresolved information needs, teleworkers were unable to complete their work tasks as their at-office colleagues did. Instead, they adopted coping strategies to overcome obstacles in information access.

A close inspection of what happened to teleworkers' work reveals that two aspects of work taken home influenced the pattern of task completion: type of task and the degree to which teleworkers attempted to simulate office work routines. Teleworkers tried to take home the tasks they used to complete in the at-office environment before they began to telework. Full-time teleworkers performed the same range of duties as they did when working in the central office. Part-time teleworkers took home those tasks they felt they could do at home or that their employer had deemed teleworkable. These tasks often included assignments which required long periods of concentration and few interruptions, such as editing. Typically, teleworkers followed the work steps they learned in the central office to execute tasks. In addition, they usually attempted to recreate the office experience at home, so that they performed tasks as they had done at the central office. Since teleworkers executed similar work steps as they had at the central office before teleworking, they reasonably concluded that they exercised the same control over how they performed their work duties as they had at the central office. However, because the work process was often left unfinished, work processes often extended to the central office and were thus analyzed as being less under the worker's control.

When missing necessary work information, at-office workers turned to colleagues or other information resources and solved information gaps immediately. Teleworkers, on the other hand, generally set aside tasks or broke tasks into subtasks designated for home or the central office. For work routines in which a certain degree of repetition already existed (e.g., cataloguing, indexing), the repetition of steps increased for teleworkers who were missing information. For instance, one teleworking cataloguer attempted to recreate the office experience in the home environment, but could not complete cataloguing records, her main work task, at home. She developed the first portion of a cataloguing record at home, but left subject heading assignments for a trip to the central office. In this case, the repetition of the steps involved in preparing a complete cataloguing record began sooner for her than for her at-office counterpart. Others, such as

web editors and consultants, left work tasks for which information was unavailable unfinished. For instance, consultants usually performed a wider variety of tasks at home, so that they could turn from one task to another, when lacking information. These strategies used to circumvent missing information or to accommodate taking work home suggest that teleworking imposes some constraints on certain aspects of work-related decision making.

Although these problems of routinization and fragmentation might appear to be applicable only to work done by teleworkers, and, indeed, an electronic workshop for teleworkers is a major concern of labour organizations (e.g., Johnson, 1993), this difficulty also placed a significant burden on at-office workers, who often reported that they compensated for absent teleworking colleagues. Teleworkers confirmed that they depended on at-office colleagues for information. At-office workers performed additional duties to help teleworkers obtain work-related information, as well as to complete work tasks in the central office that teleworkers were not present to do. The juggling required for at-workers to fulfill their own work obligations, while simultaneously performing additional work duties, also leaves at-office workers vulnerable to fragmentation of their work tasks and potentially reduces the efficiency of the at-office worker in her/his job. In addition, the shifting of certain work tasks to at-office workers reveals possible scenarios for redistribution of labour that increase the vulnerability of the task composition of teleworking positions.

Finally, amounts of professional and clerical work were compared for teleworkers and at-office workers. Teleworkers frequently distinguished between home and central office work tasks. Nearly every teleworker, including full-time teleworkers, reserved some tasks for the central office. Approximately one-half of teleworkers, namely the part-time teleworkers, divided their tasks between work locations according to whether the work was professional or clerical in nature, reserving one type of work for a particular work location. Teleworkers most frequently divided tasks according to the location of the tools and information required to perform these tasks. Although teleworkers also believed that they were

increasing their productivity by taking certain tasks home, teleworkers and at-office workers did not differ significantly in the overall amounts of and time spent on professional and clerical work actually observed at home and at the central office (Table 1). However, we should note that this comparison does not include unfinished tasks caused by information gaps.

Table 1: Comparison of Professional and Clerical Work Tasks Performed by Teleworkers and At-Office Workers							
Observation	**Mean**		**SD**		**t**	**df**	**p**
	TW	**AOW**	**TW**	**AOW**			
Time Spent on Clerical Tasks (time in min./total obs. time)	0.1885	0.2008	0.2151	0.2448	-0.204	58	0.839
Time Spent on Professional Tasks (time in min./total obs. time)	0.8115	0.7992	0.2151	0.2448	0.204	58	0.839
Number of Clerical Tasks Performed (number of tasks/ total obs. time in min.)	0.3981	0.3456	0.1709	0.1599	1.228	58	0.224
Number of Professional Tasks Performed (number of tasks/ total obs. time in min.)	0.608	0.6544	0.1701	0.1599	-1.087	58	0.282

7. Discussion

The failure to process information presents a significant problem for teleworkers in terms of decision making and power. Performing only parts of tasks exposes teleworkers to a simplification of their work tasks. While proponents of the reskilling perspective would argue that the identification and removal of repetitive tasks from a worker's routine is upskilling that person's work, it is also

possible telework could become the domain of simplified tasks, thus contributing to a deskilling of work. In this study, those participants, such as consultants, who were fortunate to have multiple tasks to perform in their home workspaces, were able to take home a variety of work to try to reduce repetition, while indexers and cataloguers, whose work did not offer the same degree of variety as the consultants' work, were unable to avoid repetition when they were missing information needed to complete their work tasks.

Because teleworking participants in this study were employees, they were comparatively more privileged than freelance teleworkers who perform a single, repetitive task. Even cataloguers, indexers and one salesperson, whose work was the most repetitive work observed in this study, sometimes had other secondary tasks they could perform at home. For instance, one cataloguer took home committee work to do when cataloguing became tiring or could not be finished. Having extra work at home to fill in when a primary task could not be continued gave a teleworker confidence that she/he had fulfilled job expectations. The sense of security associated with being an employee is important, because, unlike workers sent home for the sole purpose of performing repetitive work (e.g., Zeytinoglu, 1993), they enjoyed the guarantee of remaining employed although they set aside work they could not finish. Thus, while routinization and fragmentation of work tasks did occur for teleworkers to a greater degree than for at-office workers, these negative effects were mediated by the participants' privileged status as employees. The teleworkers in this study were still not comparable to 's entrepreneurs who fully control all aspects of their work processes, but they were more privileged than workers who perform single, repetitive tasks at home.

In terms of the amounts of professional and clerical work performed by teleworkers and at-office workers, teleworkers showed no signs of upskilling nor deskilling in the way they divided their work between home and central office workspaces. Nor did the findings in this study indicate work role improvement through telework. Teleworkers in this study did not dramatically increase the

degree of their concentration on discretionary functions. Instead, they seemed to juggle both professional and clerical duties, reserving particular tasks for the central office when they lacked the resources to finish these tasks. The real difficulty for teleworkers in this study was the negative impact missing information had on their work processes. The unresolved information gaps suggest that, although they may perform similar numbers of clerical and professional tasks and for similar amounts of time as their at-office colleagues, teleworkers lacked the information that would have enabled them to complete their work duties at home. Given the findings of this exploratory study, we need further research into the impact of telework on work. We need to monitor the development and impact of this work arrangement on work processes, since there is some indication that predictions by Braverman (1974) and others are supported. In this study, missing information encouraged teleworkers to adopt work behaviour in which they performed less skilled work when they could not complete an entire task, leaving them vulnerable to deskilling. Combined with the deskilling trend already observed in studies of library and information science positions (e.g., Hafter (1986) and Reuter (1991)), the vulnerability of teleworking library and information professionals is particularly acute, even though the workers may not see the problems associated with working from home.

Notes

[1]For a detailed discussion of teleworkers'   needs and uses with regard to information, see The Case of the Missing Information, to be presented at the ISIC, Goteborg, Sweden, August, 2000.

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