

Learning through the physical environment in the workplace

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The physical surroundings are often overlooked in discussions on learning in the workplace. The physical environment, however, may hold significant messages for organizational members in relation to what they need to know about the culture, structure and roles and routines of the organization. This paper discusses how differences in the physical environment of two departments in the same organization influenced the way that people worked and learned.

organizational culture, physical environment, organizational learning, organizational structure, workplace learning

INTRODUCTION

The amount of investigation of learning in the workplace has increased dramatically in recent years (Argyris, 1992/1999; Cook & Yanow, 1996; Czarniawska, 1997; de Geus, 1988; Huber, 1996; Larson-Knight, 2000). Globalization and competitive pressures have forced organizations in many sectors to attempt to increase learning at individual, team and organizational levels in order to ensure that the organization survives and prospers. It should be acknowledged, however, that besides learning about the work processes and competitive environment of the organization, organizational members need to know about the culture and structure of the organization to operate effectively. This paper contends that organizational members draw messages from their environment that supports their learning.

The nature of organizations is such that interactions take place not only between members, but also between the members and their physical surroundings, such as buildings, their layout and their objects (Assmann, 1995; Domingues, 1997; O'Toole, 2000a). Past activities and events are embedded in the patterns of behaviour and the artefacts, and have symbolic meaning for the members (Assmann, 1995; Domingues, 1997; Doxtater, 1990; Gagliardi, 1990; Gagliardi, 1996; Hatch, 1990; Larsen & Schultz, 1990; O'Toole, 2000a; O'Toole, 2000b; Rosen, Orlikowski, & Schmahmann, 1990; Witkin, 1990).

The purpose of this paper is to discuss the relationship between the physical environment of the organization and learning in the workplace. It is argued that the physical surroundings of an organization such as the building, layout, machinery, equipment, and uniforms may have a significant impact on the way people work and therefore the way they learn. It is important to note that learning need not be intentional. Learning is defined as taking place where potential behaviours change through acquiring, distributing or interpreting information (Huber, 1996). In this paper, learning is deemed to have taken place where people learn their tasks, role, the structure and culture of the organization or new ways to operate.

After the literature is reviewed, a case study is discussed where research on two different departments in a small organization took place. The particular focus in this paper is the

organization's physical layout, which is investigated in the cultural and structural context of the organization.

THEORETICAL FRAMEWORK

It is clear that people create the physical environment around them. People design and build buildings, create and implement floor plans, choose and obtain the objects with which they surround themselves. At the same time, the physical environments thus chosen also influence the individuals who dwell and work within the same physical surroundings. The environment that surrounds people is an element of social structure, and, as Giddens explained, becomes part of the structuration process, influencing the humans associated with it, while human agency influences the organization and substance of the artefacts within it (Giddens, 1984; Gieryn, 2000; Rosen et al., 1990). This influence relates to meaning, values and beliefs that form part of the "place-identity" that a site or object may hold for an individual.

Proshansky, Fabian and Kaminoff (1995) saw "place-identity" as a sub-structure of an individual's self-identity. Schemas relating to an individual's past experience of how places have satisfied needs and desires form as the individual matures. Out of good and bad experiences emerge values and beliefs about the physical world and its meaning. Part of these meanings relates to role associations. An individual learns through childhood the appropriate behaviours relating to roles in school, home and neighbourhood. Environmental understandings and competence result from an individual's adaptation to each setting (Proshansky et al., 1995). As the individual matures and commences work, this adaptation and adoption of roles according to place continues.

Because place constitutes only background, perhaps it will only be when the physical setting does not meet the needs of the individual that the individual may become acutely aware of discrepancies (Proshansky et al., 1995). Proshansky et al. gave the example of a new Associate Professor who has to share his office with many other young faculty members.

Missing are the books, research files, private conversation area ... associated with the role of academic faculty researcher the meanings of space and place are not being met by the actual physical setting in which he is expected to play this role we can expect the 'Assistant Professor' to be very much aware of his [inadequate] ... physical setting, particularly when his students come to see him; and second, at some level of awareness he may self-consciously be uncertain of his status as an Associate Professor especially in regard to his colleagues who have the rank but more adequate academic offices.

(Proshansky et al., 1995, p. 93)

The organization of physical space may contain potent messages for members of an organization according to the meanings attributed to them. Gargliardi (1990) described how, in the U.S. Navy, there was a clear allocation of rooms for formal lectures on the one hand, and discussion and criticism on the other. This division of space was occasioned by the need of the Navy to enforce discipline and authority while promoting discussion and critical thinking in new officers. The division of space clearly indicated the behaviour appropriate to each norm, and the recruits learned the appropriate use for each space.

Schein (1985, pp. 240 - 241) gave a very clear account of how two organizations' physical environment, in the form of their floor plan, encoded information about the culture:

Action, with its assumptions about truth through conflict and the importance of open communications, has chosen an open office layout with partitions only high enough to permit a sense of privacy when one is sitting down. Private offices are given only to a few people who need them, and then typically have glass door so that one can always see who is in....Managers at Multi spend much more time thinking things out alone, having individual conferences with others who are centrally involved, and protecting the privacy of individuals so that they can get the work done. What the visitor encounters in this organization is a lobby manned by a guard and closed doors on all sides.

Technological objects are also manifestations of culture, both of the organization and of the broader social system. Mumford (cited in Kingery, 1993, p. 205) suggested that “the machine cannot be divorced from its larger social pattern; for it is this pattern that gives it meaning and purpose”. Kingery (1993, p. 207) argues:

In a factory, for example, there is a system of discipline, of rules, of politics in the traditional sense. The forms of machines help enforce these rules: they suggest the easiest possibilities to those who use them. They mediate between the people who make the rules and the people who have to follow them.

The physical layout of workplaces can also affect the behaviour of organizational members (Oldham & Rotchford, 1983; Strati, 1990) and show the structure of an organization (Giddens, 1984; Rosen et al., 1990). The physical separation of offices insulates each member and gives a measure of autonomy to those within them, and also serves as a powerful marker of hierarchy (Fischer, 1997; Giddens, 1984; Rosen et al., 1990).

Organizations may choose to adapt their physical layout to promote learning that gives a competitive edge. Brenner and Connell (1994) conducted research on the privacy and collaboration needs of knowledge workers. They found that the configuration of floor plans was one factor that actively promoted a learning environment. Pedler, Burgoyne and Boydell (1991/1997) suggested that the environment of an organization may help support the learning climate. They gave the following examples of "architectural practice with the possible organizational interpretations" in Figure 1.

Design Features	Function
removal of dividing walls	decentralize functions, remove central services
partial removal of floors	
outside staircases; putting service pipes, etc. outside	encourage outside trading
central courtyards, wells, atriums	re-train people, encourage radical job changes
add balconies	celebrate differences, encourage expression
re-cycling old bricks, etc.	
use historical objects as sculpture	blur home/work/community boundaries
lots of inside greenery	
put skylights in the roof	full disclosure; open up top management processes for inspection and comment
put in bigger windows	
preserve historical objects	
demolish departmental boundaries	encourage secondments outside

Figure 1. Architectural features with the possible organizational function, as adapted from Pedler et al. (1991/1997, p. 127)

It should be noted, however, that Pedlar et al. make no claim to prior research confirming their conclusions, and the emphasis in their arguments should be on the word "possible". Von Krogh, Ichijo and Nonaka (2000) observed how architecture and disposition of floor space appeared to promote an organizational learning culture in a variety of firms. An example of this occurs in Phonak, a Swiss company making advanced hearing systems. Phonak House is described as "a visual representation of the company's boundary-breaking culture" (p. 37), with open areas, no separate floors for directors, and a minimum of dividing walls.

Field (1995) also saw physical layout and artefacts as factors to promote or impede organizational learning. He cited bundy clocks as a mechanism to “communicate mistrust and lack of respect” (p.

58) and saw manifestations of environment such as uniforms, partitions and differentiation in office size and associated amenities as promoting barriers to communication and working collaboratively.

Hence, physical layout, artefacts and place-identity may contain role associations, symbolic meanings, and messages about structure and power in the organization. It is also suggested that physical layout and artefacts may themselves contribute or hinder effective learning in the organization that contributes to the organization's achievement of strategic goals.

THE CONTEXT: DOVE FUNERAL SERVICES

Dove Funeral Services (Dover Funeral Services) was a family business of funeral directors that employed approximately 40 people. At the time of the study the business had a Head Office and several branches in the metropolitan area, although this paper concentrates only on the Head Office. The organization was managed by a group of four managers, lead by the General Manager.

The organization was basically structured along the following functional lines:

- Administration** - included wages, word processing, prepaid funerals and accounts;
- Coordination** - were responsible for the allocation and rostering of staff and equipment to transfers of bodies, funeral arrangements, viewings, services and interments;
- Funerals** - the tasks of arranging funerals, viewings and conducting funerals (including interments);
- Mortuary** - where the bodies were prepared for burial.

The part of the study dealt with in this paper is mainly concerned with the funeral and coordination staff.

Methods

The research methods employed were mainly qualitative, with an ethnographic focus that sought to "construct descriptions of total phenomena within their various contexts and to generate from these descriptions of total phenomena the complex interrelationships of causes and consequences that affect human behavior toward, and belief about phenomena" (Goetz & LeCompte, 1984, p. 3).

The case study was based on visits to the organization's Head Office and one of the branches. The data were collected over a period of approximately of two months. Ten semi-structured interviews were conducted with a selection of staff and managers. The staff interviewed included people from the coordination office, the administration area and some funeral staff. The remaining staff were requested to complete a semi-structured questionnaire. Observation took place within the Head Office, and documents prepared within the organization were collected for later analysis. The different methods of data collection were employed to ensure a method of triangulation to test the validity of the data. Also, staff who were interviewed were asked to check transcripts of their interviews for accuracy and meaning and a report was sent to the General Manager of the organization for his comments and feedback.

Analysis

While some preliminary analysis was conducted during the data collection, the main analysis took place in the months after data collection was concluded. Quantitative questions were converted to tables and charts using spreadsheets in Microsoft Excel 98. The narrative portions of questionnaires were converted to NUD*ist 4 documents, as were the interviews and the observation field notes. Documents that had been collected from the organization were also noted on NUD*ist. Themes that had emerged from the research questions and the data collection were created on NUD*ist, then portions of the interviews, questionnaires, field notes and documents were assigned to each theme. As the data were analysed further themes emerged; some themes were discarded while some old themes were subsumed into these new themes.

THE FINDINGS OF THE STUDY

The findings of the study were classified at the organizational level that were relevant across the organization as a whole, and at departmental level, where the situations for the coordination staff and funeral staff were compared.

Findings: The Organization

One of the major undertakings of the study was to discover the collective understandings that underpinned the site's culture, and it is necessary to examine the culture before an attempt can be made to understand the meanings of the organization's artefacts and spaces.

A value generally held throughout the organization was that of customer service. Customer service was continually mentioned in interviews, observations and recorded in the questionnaires. There seemed little doubt that it was a core value for the company, and that it formed part of their cultural identity. Some typical comments relating to the organization's primary focus were:

Provide a good service to the people who need it

Serve our clients to the best of our ability and be the best at what we do.

.... Being professional, very professional and I guess being there for the family, to help them through the arrangements, support the family in any way we can.

Many of the staff also saw the company as old-fashioned and formal in the way it conducted business:

They are pretty set and traditional, I feel

.... That's everyday in our, our attire and the way we conduct things, the way our business is presented, so yes, its formal but it's also formal from a managerial point of view in that the staff are not really involved in any of the managerial decisions or discussions.

This formality did not extend to the interactions between managers and staff. While the authority of the managers was not questioned, and staff were not involved in managerial decision-making, the relations between staff and managers seemed extremely cordial. All managers were called by their first names and the staff often did not use (or know) the managers' formal titles.

The Physical Environment

The Head Office was clearly separated into two areas. These areas could be respectively described as "client" and "functional".

The client areas were furnished with muted colours and upholstered furniture in a traditional style. Tissues were in evidence, contained in ornamental tissue boxes. One of the client areas was a cottage that contained four meeting rooms as well as the office of the Bereavement Education

manager. At the back was the casket viewing room. This cottage was sometimes used for meetings and making arrangements, when the client wished to come to the premises. The impression gained by the researcher was of comfortable, yet formal, areas where sensitive discussions could take place.

A larger building next to the cottage also contained a client area, but was the main location of the operations. A plan is shown in Figure 2.

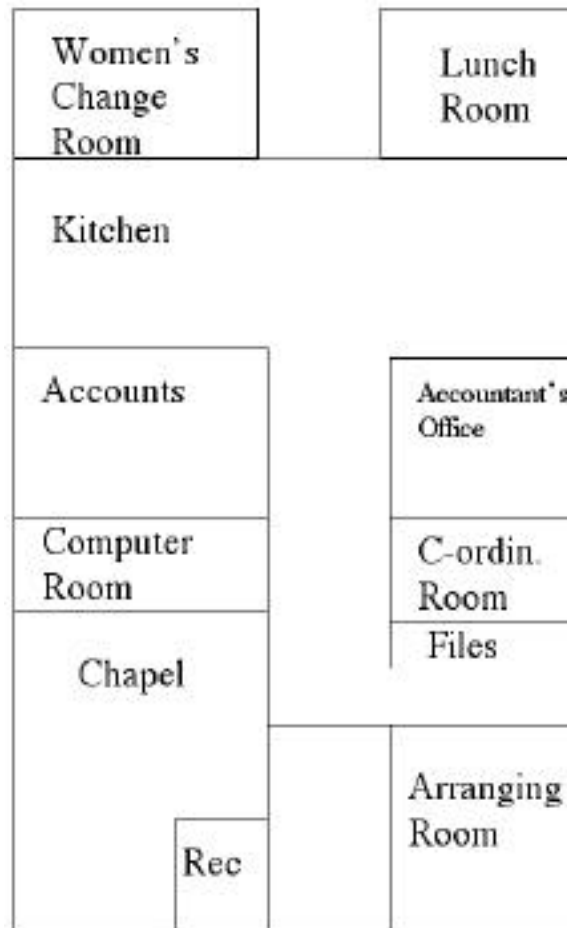


Figure 2. Floorplan of main building at Dove Funeral Services

The client area in this building was furnished in timber and decorated in dusky pink. Piped music was played. The configuration of rooms was such that funeral services could be held.

The functional area was less well maintained, although it was air-conditioned. This area was comprised of the coordination office, the accounts office, an office for the Administration Manager, the computer room, a kitchen, a lunch room, the women's change room and areas for files, photocopier and storage. The bathroom contained a bath/shower as well as the usual amenities, with a lock on the main bathroom door so that the staff were able to change from their car washing clothes to the required uniform. The funeral staff did not have desks, and meetings between the funeral staff were seen to take place in the lunch-room. The lunch-room contained newspapers and a vending machine, as well as table and chairs.

The four managers of Dover Funeral Services had their own offices, while other staff either shared work space or, as in the case of the funeral staff, had no work space allocated. The staff generally

had unrestricted access to the organization's buildings, however the main staff meeting areas were the lunch room and kitchen. These two rooms were communal space where staff could hold meetings, have social chats and find out what was going on in the organization. The managers would also frequent these areas, where staff could approach them on various matters.

A Tale of Two Departments

The major difference noted between the coordination area and the funeral staff was the degree of the individualization of the work. In the funeral area, the level of discernible similarities in task performance was low, particularly in the more experienced staff. A high level of discretion was allowed by management, probably due to the complex nature of the work. The comment below illustrates the degree of individuality in task performance:

... you could go out on a funeral with one conductor here in the company and then like it suits his style, and then another conductor does a funeral for a person, same age, same chapel, everything the same situation, and you'd swear they were two different companies.

There was some evidence that this high level of individuality made the job difficult to learn for new staff. One staff member commented:

Funeral conductors all have their own way of conducting [therefore it is] difficult for new staff - no consistency and so therefore newer staff can be in the bad books and not know why.

When learning the job, funeral staff appeared to gather information from the more experienced staff members and then formulate their own ways of doing things. In the coordination office, on the other hand, there was a higher level of standardization, as shown by this comment:

... there are many things we do, that we have to do because that's the way [Dover Funeral Services] does them, mostly in funeral arrangements, even to the point where, when we fold forms we fold them to the outside, and they are all folded a certain way.

The coordination office staff tended to work in pairs, in several shifts. Where possible, a more experienced person would be teamed with a newer staff member, and each staff member was seen to assist the other wherever possible. One staff member was observed handing out notes from an old file that she felt would be of assistance to the other people in the coordination office. Files were centralized so that access was available to all the coordination staff members.

The task structure differed between the coordination office and the funeral staff. While three funeral staff would be allocated to work on one funeral, it was observed that each person had a defined role, and the person nominated as the funeral conductor was clearly in charge of the funeral, with his/her way of doing things predominating for the task. This conductor would collect the funeral card, which contained the funeral specifications, and keep it in his/her possession until the interment was completed.

In the coordination office, however, the staff shared tasks. Because Dover Funeral Services worked on a roster system, it was usual for a staff member to commence a job that would be finished by some one else. Hence the coordination staff used notes and diaries to communicate with people on other shifts, and use the same files as references.

The Physical Environment

The major difference in the physical environment between the coordination office and the funeral staff was the basic work-space. The coordination office staff actually had an office allocated to them. The funeral staff did not. It was interesting to note that this was reflected in the terminology used in the organization. The coordination office staff were referred to as "the office" or "the

coordination office people" etc. The funeral staff were never known as the "funeral office" or the "funeral department", they were always referred to as the "funeral staff" or "the conductors".

While the funeral staff did not have their own work space, they did have their own arranger bags, which were not lent to other staff. These bags were labelled with the arranger's visiting card and each arranger managed the contents of these bags according to their own preferences. The coordination staff, as mentioned before, shared space, files and furniture. The funeral staff did not share space so much as "squat" where convenient. The funeral card, their major documentation, was possessed and used by one person, who was in charge of the task of conducting funerals.

Discussion

It seems clear that a relationship can be discerned between the physical artefacts reported here and the culture of the research site.

The fact that the managers used the same physical space as the staff may have contributed to the cordial relations between them. However the possession of their own physical space by managers in the form of their own offices may, at the same time, have emphasised their higher position in the organization. Thus, the physical artefacts reflected the position of the managers and the appropriate interactions with staff (Giddens, 1984; Kingery, 1993; Oldham & Rotchford, 1983; Proshansky et al., 1995; Rafaeli, Dutton, Harquail, & Mackie-Lewis, 1997; Rosen et al., 1990).

The client service principle was demonstrated in the organization's physical place. The client areas were differently presented to the functional areas. Clearly more money was spent on them to create an ambience of well-bred comfort. Far less money was spent on the functional areas; floor coverings were shabby and the paint was peeling, however, newspapers were bought for staff and bathrooms were provided, indicating that the physical environment was conducive to providing the service in comfort, but without unnecessary frills.

Interestingly, when staff wore the car-washing gear, they rarely set foot past the kitchen area during the time the researcher was there, even though the client area was several rooms away. It was also interesting to note that staff were rarely seen in the front of the building, in the client areas, unless they were actually dealing with clients, thus the client areas were seldom used for meetings by staff. This is perhaps similar to Gagliardi's (1990) example of physical space being associated with organizational norms. In the case of Dover Funeral Services it was considered inappropriate to use certain areas except when dealing face-to-face with clients.

Differences between the coordination area and the funeral staff had a clear relationship to how space was allocated and used. The individuality of the funeral staff was symbolically represented in the arranger bag. The funeral staff member could be thought of as having only a few spaces and artefacts that were his or hers, such as the bag and their individual pigeon-hole, but these places were **indisputably** his or hers. There was no pressure to share as with the coordination staff. If there was conflict with another member of the funeral staff, the staff member could walk away and do their work elsewhere. When conducting a funeral, one person was in charge; if the two other funeral staff did not agree with the way the funeral was conducted, they had to put up with it.

The coordination staff, however, were tied by their duties to a specific physical space that they were obliged to share with other people. Collaboration and sharing of resources was necessary because they relied on each other to perform and finish tasks that they had started. They also tended to be identified as a group, and if one person made a mistake, they were all implicated. As in Schein's (1985) example of Multi and Action, the physical layout clearly reflected group norms and ways of working for both the coordination staff and the funeral staff. It should be noted that

the lack of an office or shared work space for the funeral staff was not mentioned or alluded to in anyway by any member of the organization. The researcher had to ask a direct question before the information concerning the lack of work space for funeral staff was forthcoming. This would indicate that the organizational members were simply not conscious of anything unusual. The work space was very much in the background of their minds (Proshansky et al., 1995).

CONCLUSIONS

The primary purpose of this paper is to explore the relationship between an organization's internal physical environment and the complex web of culture, structure and routines that make up the workplace. It is argued that with regard to Giddens's model of structuration, that the physical environment and artefacts pertaining to that environment form part of the social system that influences and is influenced by human agency. This paper has shown, through the literature and by empirical research, how the physical environment is caught within the web of role associations, symbolic meaning and hierarchical and power relationships that influence organizations. As a new member joins the organization, the physical environment reinforces the processes of socialization that the new member undergoes. The field study did not show how the physical environment may influence the organizational learning that contributes to the achievement of strategic goals, and, as implied, there is clearly a gap in the literature that could be filled by further research.

This paper also implies a need for caution on the part of organizational practitioners who implement organizational interventions. The relationship between the organizational constructs such as structure, culture and work performance, and the physical environment would indicate that such interventions need to take into account a complex set of variables before they could hope to succeed.

Physical layout and artefacts, despite being taken largely for granted in daily living, continually embody meanings and representations that are important to the people whom they surround. The implication here is that any exploration of culture or organizational life that does not include some degree of symbolic interpretation of the corporeal setting is omitting an important, though complex, store of meaning.

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