

Organizational Forgetting in Higher Education

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1. Introduction

The sum of experience and capabilities of individual members of an organization is an important factor that defines the experience and the capabilities of the organization, influencing directly its performance and efficiency (Grusky 1961; Shaw 1981). The degree of organizational learning defines the ability of the organization to transform the experience and the capabilities of individuals into organizational capabilities. Many researchers have studied the process of organizational learning through the members of the organization; however, the processes of organizational unlearning and forgetting have not been studied with the same intensity. According to Martin and Phillips (2003), the forgetting process is just as important as the organizational learning process to achieve a sustainable competitive advantage; however, many papers don't mention these organizational capabilities.

According to Carley (1992) and Rao and Argote (2006), the literature identifies some causes for the unlearning and forgetting of organizational capabilities; however, turnover is one of the most important. On one hand, the research about the causes of the turnover has been studied in depth; however, few papers have studied the consequence and the effects of turnover (Staw, 1980). On the other hand, although the relationship between turnover and organizational learning has been studied in the past (Carley, 1992), there are few mentions of the relationship between turnover and organizational unlearning and forgetting.

In this field, the research about the relationship between turnover and organizational learning (and indirectly, unlearning and forgetting) has focused on the organizational structure (Carley, 1992) as the only factor that affects this relationship. However, the results of previous research suggest that there are other factors that could affect organizational forgetting. An analysis of the literature on the subject leads to two questions: What factors influence organizational forgetting in addition to the organizational structure? What importance does each factor have on organizational forgetting?

To answer part of these questions, this paper compiles and unifies the literature about turnover, organizational unlearning and especially, organizational forgetting. From this departure, the researchers propose a pilot study: An inductive research in order to identify the factors that affect organizational forgetting. To achieve this goal, the researchers have carried out a literature review of the topic in depth and an empirical study based on the analysis of a set of interviews in the field of university education, more specifically, in a whole university department. This paper presents the methodology, the results and the conclusions of this pilot

study. The final objective of this research is to present a framework about the factors that influence organizational forgetting when turnover takes place.

2. Theoretical framework

2.1. Understanding organizational forgetting

Organizational forgetting has been defined as the intentional or unintentional loss of organizational knowledge at any level (Martin and Phillips 2003), as well as changes in beliefs and routines (Akgün et al, 2006). The earliest contributions by Wickelgren (1976) and Anderson (1985) were developed in the area of operations and based on the study of the degradation of knowledge due to interruptions in the production process. In the field of organization theory, researchers such as Hedberg (1981) and Nystrom and Starbuck (1984) developed the concept of unlearning to illustrate a type of intentional forgetting. Following these initial contributions, organizational forgetting has been studied mainly from two standpoints. The first standpoint considers forgetting (or unlearning) as an intentional process of discarding organizational knowledge or routines to make way for new ones. The second standpoint sees forgetting as an accidental or unwanted process of degradation of the organizational knowledge.

From the first standpoint, some studies examined intentional forgetting as a preliminary step to organizational learning: forgetting the old and developing a better, more appropriate routine as a way of adapting to changed circumstances (Argote, 1999). This view argued that certain routines, rules, tasks, roles, policies, values and strategies need to be forgotten before new organizational knowledge could be acquired and assimilated. Forgetting was thus viewed as a necessary process for the management of change (Dogson 1993). In this sense, Navarro and Moya (2006) considered unlearning as the dynamic process that identifies and removes ineffective and obsolete knowledge and routines, which block the collective appropriation of new knowledge and opportunities. According to Martin and Phillips (2003), the forgetting process is just as important as the organizational learning process for achieving a sustainable competitive advantage. The aim of this stream of research was to show that organizational learning must be complemented with an understanding of how and under what circumstances organizations must intentionally forget. Recent studies arrived to the conclusion that this kind of intentional loss of knowledge should be considered as unlearning, to distinguish it from the concept of forgetting: Since intentional discarding of routines and unintentional loss of routines involve different mechanisms and generate different consequences, for clarity, we define the former as unlearning and the latter forgetting, respectively (Tsang and Zahra, 2008)

In contrast to unlearning, forgetting should be understood as inadvertent loss of knowledge. The forgetting process may be considered a natural deterioration of the organizational memory, usually with negative consequences. In this way, the research carried out by Smunt and Morton (1985) and Smunt (1987) reasserted that the loss or depreciation of knowledge has far-reaching implications on production programming and planning. Similarly, the quantitative study carried out by Argote, Beckman and Epple (1990) on the modelling of learning curves broke with the assumption that experience accumulated indefinitely (assessed as accumulated units produced), and confirmed empirically that knowledge acquired in production depreciates quickly. Later research has quantified the value of the depreciation of knowledge in production, with widely varying results. Moreover, Darr, Argote and Epple (1995) concluded that just 47.4% of the stock of knowledge at the beginning of the month was maintained at the end of the month in pizza franchises. Benkard (2000) found that 61% of the stock of experience of a firm that manufactured airplanes was retained in the course of one

year. Other similar works (e.g. Epple, Argote and Murphy 1996) gave similar results in the automotive industry. The mentioned studies (Argote et al., 1990; Darr et al., 1995; Epple et al., 1996; Benckard, 2000) considered that personnel turnover might have an important role in knowledge depreciation, though it wasn't their main issue of research.

2.2. Organizational forgetting and personnel turnover

Understanding why organizations forget involves understanding where organizational knowledge is stored and how it is retained in the organization's memory. Walsh and Ungson (1991) define organizational memory as stored information from an organization's history that may affect its present and future interpretations of events and managerial decisions. Organizational knowledge may be stored both in human and non-human repositories (Cross and Baird, 2000). When people move from one organization to another, they carry along their individual knowledge, so organizational forgetting may occur through personnel turnover. However, the organizational knowledge embedded in non-human repositories and in human repositories that keep staying can persist over time and buffer the organization from the effects of forgetting due to turnover.

Although research on the causes of turnover has accumulated over many decades, research on the consequences of turnover is a more recent phenomenon (Staw, 1980). Field studies have found a negative effect of turnover on performance. Studies of sport teams have reported that the number of new players in a particular season had a negative effect on performance of the team that season (Brown, 1982; Pfeffer and Davis-Blake, 1986). Although there are rules and regulations about how games should be played, the personal relationships among the players and the interactions among them are very important. These interactions are often idiosyncratic. When people move from one organization to another, they carry along their idiosyncratic knowledge. So, when people leave without mechanisms for transferring personal experience, organizational memory degrades and the organization effectiveness and productivity may decrease. In this sense, Glebbeck and Bax (2004) found that high turnover reduced the performance of offices of a temporary employment agency. Office staff should acquire idiosyncratic knowledge about client preferences that was lost when members depart. The researchers found some support to nonlinear relationship between turnover and performance: The effect of turnover is negative at high levels of turnover and positive or neutral at low levels. In contrast, Argote et al. (1990) did not find an effect of turnover on the productivity of Liberty shipbuilders during WWII. They presumed that the structures of the shipyards may have buffered the organizations from the effects of turnover.

In order to provide a deeper analysis on how organizational structure may affect organizational learning and forgetting, Carley (1992) developed a research based on simulation models. Comparing the learning rate of teams in front of hierarchies, she concluded that teams learn faster and better than hierarchies when new personnel are novices or fit well with the organization, whereas hierarchies act as information warehouses and are less affected than teams by turnover. Further, in hierarchies the upper management acts as a buffer zone protecting the organization from turnover. Structural buffering occurs in hierarchies where managers actually limit the "damage" a single analyst can do, thereby making hierarchies more resilient than teams. Similarly, Rao and Argote (2006) conducted an experimental study where different groups were exposed to different levels of activity structure and member turnover. Their results showed that if groups experience turnover, they perform better when roles are specified and routines exist than when roles and work routines are not specified clearly. When there is no turnover, there is no difference in the performance

of the low and the high structuring of activities groups. Further, the performance increase is greater in groups that do not experience turnover than in groups that do.

As shown, the impact of turnover on organizational forgetting can differ from one organization to other depending on the organizational structure. The aim of our research is to understand which other factors, in addition to organizational structure, may act as moderators on the relationship between personnel turnover and organizational forgetting. Figure 1 shows a global framework.



Figure 1. Global Framework to analyze organizational forgetting process when turnover takes place

3. Method

3.1. Participants

A total of 30 lecturers and professors from the Management Department in a public University participated in the study. The average age was 38.5 years ($SD=12.46$) and there were slightly more males ($N=19$; 63.33%) than females ($N=11$; 36.67%). Participants were employed by the university for 10 years ($SD=8.10$). A diverse set of labor types was represented, including full professors, assistant lecturers, associate lecturers, and part time lecturers.

3.2. Procedures

The study analyses six consecutive semesters of three different degrees in the University where the participants worked. The first step in the empirical study was to identify the courses where the turnover has taken place during this time. In this context, we define turnover as “the process by which a lecturer or a coordinator is replaced by another one between two consecutive courses”.

According to the historical records of the University, 25 subjects were affected by 33 turnovers. In some cases, there was turnover during various consecutive courses in the same subject. The research takes the event of turnover as the unit of analysis.

The information required to carry out a study of this nature was not readily available from secondary sources. We therefore collected information from primary sources through deep interviews with the participants. Every interview referred to just one turnover process and was personal and private, following a semi-structured script. We interviewed all members have been involved during the processes of turnover, so we had to interview some of the participants on several occasions (different courses and different subjects). Finally, we carried out 52 interviews of one hour approximately; however, some of them needed more time.

3.3. Interviews

Due to the characteristics of the turnover in the subjects, we developed different types of interviews:

- Interviews to the coordinator of a course when a lecturer was replaced.
- Interviews to the new coordinator of a course when a coordinator was replaced.
- Interviews to lecturers of a course when a lecturer was replaced.

The first set of interviews were asked to narrate what kind of activities they carried out to help new lecturers to adapt to the new course and what problems they had detected during the period of time that we were analysing. The second type of interviews was also developed following a semi-structured script; however, the interviews referred to teaching materials and the nature of the subject. Finally, the last kind of interviews referred to what difficulties they – lecturers – had found during the first months in the new course and what kind of activities they would propose in order to decrease the negative effects of the turnover in the future.

The interviews were carried out in the last semester of 2008 and centered in the turnover processes that had taken place from the last six semesters (2006 to 2008). The gathered data were reduced and processed following the strategies proposed by Miles and Huberman (1994). The reduction of the data was made by means of successive codifications of the collected data from the interviews. This step permitted us to reduce the large amount of data into a smaller number of analytic units. To achieve the aim of answering the research question, the reduction of data centered on identifying all the fragments that referred to the consequences of the turnover and the loss of knowledge within each course.

4. Results

From the interviews, it is possible to ascertain that organizational structure was the same in 84% of analysed courses. The common structure was shaped by a team involving a full time coordinator and one or two lecturers. The remaining 16% didn't have any organizational structure, given that the course was taught by a single lecturer.

Some similarities were also found in the coordinator's functions: The coordinator defined the course contents and assessment system, assigned tasks between team members, organized the assessed tasks and solved unexpected events or conflicts, in addition to acting as a lecturer. The lecturer's functions were to impart the contents, prepare or update teaching materials and assess the students. However, the management style taken by each coordinator could differ from one team to another. Some coordinators had a more autocratic style and others more participative.

Taking into account the differences, three types of team were found, according to the structure of knowledge: The first type was related to non-specialized knowledge, whose characteristic was the flexibility of its members and the possibility that all tasks could be carried out by anyone. In this case, knowledge redundancy was high and every lecturer could lecture any content of the course. This type of team was found in 32% of the analysed courses. The second type was related to theme-specialized knowledge. In this case the knowledge was divided between the team members according to the contents, and each lecturer was responsible for lecturing both theory and practice sessions of the themes assigned to them. This type was found in 20% of the analysed courses. Finally, the third type was related to a theory or practice sessions' specialization. In this case the knowledge was divided according to the nature of the sessions. The senior lecturer taught the theory sessions while the practice sessions were organized by the rest of the team. This type was found in 48% of the analysed courses.

Significant differences were also found at the standardization level of the teaching process. 56% of the analysed courses had a high level of normalization. This meant that the rules, the contents (texts, presentations, notes and exercises), FAQs, suggestions through the intranet and the division of tasks were formalized and obeyed the standards fixed by the course coordinator. The remaining 44% of the analysed courses had a low level of normalization, which meant that some rules were oral, or the main part of the content was not documented.

In order to evaluate the cost of forgetting, some questions of the interviews were designed to quantify the amount of time invested by a team to integrate a new lecturer and the amount of time dedicated by a new lecturer to learn a subject as an expert. The average answer was to consider that a new lecturer would require a minimum of 3 semesters to achieve the level of expertise for a subject. The average preparation time for the first semester for a new lecturer was 4 times the “normal” preparation time, i.e., if a lecturer invested 1 hour per class hour in regular conditions, a new lecturer should expect to invest 4 hours per class hour. The coordinator also had extra work to integrate a new member, evaluated as half an hour per week, while the rest of the lecturers didn’t notice a significant increase. Furthermore, the interviewed lecturers mentioned the quantitative/qualitative nature of the course and the availability of teaching materials, as influential factors in addition to the personal attitude of the hired lecturer and their previous experience.

Finally, an agreement was found between coordinators about how to integrate a new lecturer. They all agreed that a new lecturer might start with lecturing practice sessions. However, they accepted that this situation was not always possible and new lecturers were usually involved in lecture sessions during their first semester. We also found that 30% of lecturers involved in this research were former students of the subject they lectured, which could be considered as a way of socialization and to speed up the learning process. 9.1% of lecturers involved in this research had decided to attend lectures the first time they were involved in a subject, with the purpose to learn tacit knowledge from the senior lecturer and make the coordination task easier.

5. Discussion and conclusions

Previous research on the topic has proposed that the main factor that affects organizational forgetting when personnel turnover takes places was the organizational structure, which can be a “hierarchy” or a “team” (Carley, 1992); however, the results of this empirical study suggest two new factors: the structure of organizational knowledge and the structure of the organizational processes. On one hand, the structure of organizational knowledge can be operationalized in different ways according to the literature: tacit/explicit; codified/non-codified, etc; however, the results of this research suggest that the structure of organizational knowledge affects organizational forgetting according to its degree of specialization. In the subjects where knowledge specialization was high, we observed a higher cost associated to organizational forgetting when the turnover took place. Contrarily, the cost of organizational forgetting was much lower when the knowledge of the subject was less specialized.

On the other hand, the structure of the organizational processes refers to the degree of standardization of the course. In the empirical study, we identified many different kinds of courses according to the degree of standardization of their processes. On one hand, there were courses where the whole material and the processes were codified: books, slides, exercises, notes, comments and suggestions to students through the intranet and Internet, and the structure, the content and the rhythm of daily lectures. On the other hand, we found some

courses where a little material was codified: only some slides and some general ideas about the subject.

In the courses where the processes were very standardized, we observed a lower cost associated to the organizational forgetting when turnover took place, whereas the cost of organizational forgetting was much higher when the processes of a course were less standardized. Moreover, in the courses where the processes were very standardized, the structure of knowledge affected the organizational forgetting to a lesser degree. For example, some courses had a very low cost when turnover took place due to the fact that the coordinator had all the processes and the teaching material codified and standardized. On the other hand, other coordinators of similar courses had more problems facing turnover because they had not their processes standardized.

This research shows some secondary and interesting findings. Firstly, in the case of Higher Education, the cost of organizational forgetting falls mainly on the new lecturer. In other words, the new lecturer is responsible for obtaining and assimilating the lost knowledge after turnover; therefore this cost does not fall on the organization, but mainly on one person. However, the coordinators also have an important role in this process. Regardless of the type of factor, the results suggest that the coordinators are the main knowledge keepers and buffer deeper organizational forgetting. For this reason, the coordinators have become full time lecturers and professors due to the fact that they have fewer turnovers than part time lecturers. The empirical study shows how courses where the coordinator has been replaced by another lecturer or professor have suffered more changes and have required much more time to achieve a stable situation. Another consequence of this fact is the increase of coordinator work when there is a personnel turnover. According to the structure of the knowledge and the processes of the course, the coordinator needs to devote more time and effort to compensate organizational forgetting. Facing this overload of work, some coordinators have decided to formalize the learning process of new lecturers in order to decrease the required time to relearn the lost knowledge when turnover takes place.

We believe that the possible limitations of our work, given its nature as a piece of inductive research, are mainly connected to the fact that the cases are situated in just one organization. With the aim of enhancing the maturation of the research, we selected various subjects having the same unit of analysis and belonging to the same department. In order to resolve this limitation, we suggest that the study sample be broadened to include other units of analysis and other business activities. Future lines of research could make use of the results in this paper to develop strategies for organizational forgetting that will allow a more efficient management of knowledge in organizations. Moreover, the research findings suggest the need to keep investigating the factors that influence organizational forgetting when other facts take place. E.g. changes in the goals of the subject, loss of the knowledge repositories and obsolescence of knowledge.

References

Akgün, A.E.; Lynn G.S.; Byrne, J.C. (2006). Antecedents and consequences of unlearning in new product development teams. *Journal of Product Innovation Management*, Vol. 23, pp. 73-88.

Anderson, J. R. (1985). *Cognitive psychology and its implications*. New York: W. H. Freeman and Company.

- Argote, L. (1999). *Organizational learning: Creating, retaining and transferring knowledge*. Norwell, MA: Kluwer.
- Argote, L.; Beckman, S. L.; Epple, D. (1990). The persistence and transfer of learning in industrial settings. *Management Science*, Vol. 36, pp. 140-154.
- Benkard, C. L. (2000). Learning and forgetting: The dynamics of aircraft production. *American Economic Review*, Vol. 90, No 4, pp. 1034-1054.
- Brown, M.C. (1982). Administrative succession and organizational performance: The succession effect. *Administrative Science Quarterly*, Vol. 27, pp. 1-16.
- Carley, K. (1992). Organizational learning and personnel turnover. *Organization Science*, Vol. 3, pp. 20-46.
- Cross, R.; Baird, L. (2000). Technology is not enough: Improving performance by building organizational memory. *Sloan Management Review*, Vol. 41, No 3, pp. 69-78.
- Darr, E. D.; Argote, L.; Epple, D. (1995). The acquisition, transfer, and depreciation of knowledge in service organizations: Productivity in franchises. *Management Science*, Vol. 41, No. 11, pp. 1750-1762.
- Dogson, M. (1993). Organizational learning: A review of some literatures. *Organization Studies*, Vol. 14, pp. 375-394.
- Epple, D.; Argote, L.; Murphy, K. (1996). An empirical investigation of the microstructure of knowledge acquisition and transfer through learning by doing. *Operations Research*, Vol. 44, No. 1, pp. 77-86.
- Glebbeck, A.C.; Bax, E.H. (2004). Is high employee turnover really harmful? An empirical test using company records. *Academy of Management Journal*, Vol. 47, pp. 277-286.
- Grusky, O. (1961). Corporate size, bureaucratization, and managerial succession. *American Journal of Sociology*, Vol. 67, pp. 261-269.
- Hedberg, B. (1981). How organizations learn and unlearn. In P. Nystrom & W. Starbuck (Eds.) *Handbook of organizational design 1*: 3-27. Oxford: Oxford University Press.
- Martin de Holan, P.; Phillips, N. (2003). Organizational forgetting. In M. Easterby-Smith & M. A. Lyles (Eds), *Handbook of Organizational Learning and Knowledge Management*: 393–409. Oxford : Blackwell.
- Miles, M.B.; Huberman, A.M. (1994). *An Expanded Sourcebook Qualitative Data Analysis*. London: Sage Publications.
- Navarro, J.G.C.; Moya, B.R. (2005). Business performance management and unlearning process. *Knowledge and Process Management*, Vol. 12, No. 3, pp. 161-170.
- Nystrom, P. C.; Starbuck, W. H. (1984). To avoid organizational crises, unlearn. *Organizational dynamics*, Vol. 12, No. 4, pp. 53-65.

Pfeffer, J.; Davis-Blake, A. (1986). Administrative succession and organizational performance: How administrator experience mediates the succession effect. *Academy of Management Journal*, Vol. 29, pp. 72-83.

Rao, R.D.; Argote, L. (2006). Organizational learning and forgetting: The effects of turnover and structure. *European Management Review*, Vol. 3, pp. 77-85.

Shaw, M.E. (1981). *Group Dynamics: The psychology of small groups behavior*. New York: Mc. Graw Hill.

Smunt, T. L. (1987). Impact of worker forgetting on production scheduling. *International Journal of Production Research*, Vol. 25, pp. 689-701.

Smunt, T. L.; Morton, T. E. (1985). The effects of learning on optimal lot sizes - further developments on the single product case. *IIE Transactions*, Vol. 17, No. 1, pp. 33-37.

Staw, B.M. (1980). The consequences of turnover. *Journal of Occupational Behavior*, Vol. 1, pp. 253-273.

Tsang, E.W.K. & Zahra, S.A. 2008. Organizational unlearning. *Human Relations*, 61(10): 1435-1462.

Walsh, J.P. & Ungson, G.R. 1991. Organizational memory. *Academy of Management Review*, 16: 57-91.

Wickelgren, W. A. 1976. Memory storage dynamics. In W. K. Estes (Eds), *Handbook of learning and cognitive processes 4*: 321-361. Hillsdale, NJ: Lawrence Erlbawn Associates.