Chapter IX
Will You Recall What You Knew?

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ABSTRACT

This chapter discusses employee recall due to training presentations. Recall is an employee’s ability to remember what they knew or have learned via a training activity. This recall is improved when one utilizes structured training material. This eliminates selective scanning and provides program control for the training material. This chapter is specifically concerned with the transition from the externalization phase to the combination phase of the SECI model where the authors turn organizational tacit knowledge into explicit knowledge. They use these explicit knowledge materials to train employees for the purpose of organizational improvement. Research into employee recall is somewhat limited at this point, but the economic and personal impact for the employee and the organization are considerable when compared to the over US$2 trillion dollars spent annually by organizations on employee training worldwide. The motivation then is to design our explicit training materials so that we receive maximum benefit from improved employee recall leading to overall improvement of our organizations.

INTRODUCTION

Today we live in a “knowledge society” characterized by “knowledge workers” (Heath, 2003) who use the knowledge they have of their organization to interact with each other and change organizational outcomes. Organizational outcomes might be profits, customer retention, customer service improvements or goodwill. Whatever the outcome there are employees in the organization that have the knowledge to make these outcomes successful. Since the employee knowledge concept has become increasingly understood it has caused organizations to realize that knowledge is critical to their continued success (Wild, Griggs, & Downing, 2002). The critical part becomes the need to retain business knowledge within the organizations for future use and integration. The trend becomes one of movement by organizations from exclusive physical asset management to dual physical and knowledge asset management.
Evidence of the change from exclusively physical asset management to knowledge asset management becomes clear in that organizations worldwide are spending upwards of $2 trillion dollars on employee training and education each year. The knowledge industry has become larger each year as organizations continue to leverage their knowledge assets to produce some type of positive organizational outcome. Training and education becomes integral for an organization to remain competitive. There has been a move to expand competitiveness and positive organizational outcomes by investing in human capital (knowledge) and technology (Paye, 1996).

Because knowledge management has become a real concern for organizations it has prompted much research about knowledge capture, storage, and training systems. The knowledge residing within the employee has become an important asset for the organization to manage, usually with some type of technology system. Not only has the capture and storage of employee knowledge become important, but also the training of other employees on this newly captured knowledge.

In addition to training, improving employee recall has become a concern for organizations wishing to maximize their knowledge assets because it is in employee recall of the trained knowledge where the organization benefits the most from their knowledge asset endeavors. Worth examining in this realm specifically is the relationship between training employees and the resultant recall of the employees of the knowledge they were trained upon.

The employee must recall the knowledge they were trained upon in order to develop cognitive, or brain function, processes that convert this knowledge into useful tacit knowledge (Herbig & Bussing, 2004). Tacit knowledge is know-how knowledge (Nonaka & Konno, The concept of “ba”: Building a foundation for knowledge creation., 1998) or knowledge that is intuitive, sometimes difficult to express, gained through experience, and shared through personal interactions (Droege & Hoobler, 2003) and is tied up in the cognitive process of the employees mind. However, for tacit knowledge to become useful it has to be converted to explicit knowledge. This makes the converted knowledge (explicit knowledge) flexible or easy to use within the organization. When a business organization can successfully capture tacit knowledge explicitly they have then made it potentially available to everyone else in the organization. They have captured important knowledge from one or more employees with the intention then of distributing that captured knowledge, explicitly, to others who can benefit from it (Westfall, 2006).

Explicit knowledge is the result of some type of conversion process driven by the tacit knowledge captured from employees. Tacit knowledge is converted into some form that is readily accessible by other employees and can be used in training situations. Explicit knowledge is simply tacit knowledge put into some physical or electronic form that others may review, train upon, or access. The explicit knowledge material does not provide benefits in itself to the company other than dissemination, but it is the employees’ later recall of the explicit knowledge material that drives positive organizational outcomes.

There is no benefit to the explicit material itself because it is simply the conduit through which employee training is formalized. Employees at all levels of an organization are in constant contact with other employees thereby spreading knowledge through these personal interactions. However, since every employee does not usually have access to every other employee the knowledge exchanges may be limited. Therefore the explicit knowledge material provides the means to disseminate knowledge to everyone in the organization.

The benefit is therefore derived from the use of the knowledge distributed throughout an organization but this is not possible if the employee does not recall what they have learned during an organizational training session. These sessions
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may be in group settings, web based, CD/DVD based, or through individual apprenticeships or internships. Regardless of the method of training the result must be the employee recall of what they have learned.

To attain a successful conclusion to a knowledge management initiative an employee must be able to recall what they have learned and through interactions in their daily work life utilize this new knowledge thereby developing more knowledge. This knowledge then again becomes tacit or internal knowledge, and the knowledge management processes used previously must continually be applied to capture this newly developed knowledge.

The emphasis in this chapter is to develop an understanding of knowledge recall and the resultant solutions for improving recall once employees have received training on an explicit knowledge concept. Although recall abilities may be different in each employee it is still necessary to increase employee recall whenever possible and through whatever means possible. Therefore we will examine knowledge processes and current research into knowledge recall and discover what makes recall so important to knowledge management activities.

BACKGROUND

Nonaka and Takeuchi (1995) developed a model to describe the transfer of knowledge within an organization. This is a spiral approach to knowledge creation and conversion within an organization. This approach considered the interpersonal relationships of employees within an organization, and their relationships to the working group and to the whole organization to which they belong. This spiral approach moves from tacit knowledge to explicit knowledge and then back again.

This spiral approach gives us a foundational approach when trying to understand and formulate our knowledge management processes and procedures. Our knowledge management processes and procedures will be dictated by what quadrant of the model we desire to work within. This then helps us divide our knowledge management initiatives into workable sections. While this is most helpful to us in knowledge management especially with capturing and storing knowledge, it does not specifically address improving employee recall.

This approach examined the social interactions of employees thereby creating new tacit knowledge. The tacit to explicit and back to tacit knowledge process provides a good way for us to view our knowledge management strategies. However, when we begin to incorporate our desire to improve recall into the model we step outside the model’s parameters. What we do have is a way to compartmentalize our processes to ensure that we are working toward improving recall within the SECI model processes.

In the SECI model processes there is in the socialization phase an exchange of tacit knowledge between individuals. In the externalization phase the individual’s tacit knowledge is transferred to
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the group which is the primary knowledge force in the organization. In the combination phase the group makes their tacit knowledge explicit so that the whole organization can benefit from that knowledge. In the internalization phase the explicit knowledge is internalized and the process begins anew.

Specifically relevant to our topic in this chapter is that we find a tacit to explicit to tacit process that gives us a way to track our knowledge capture, storage, and training endeavors within the organization. However, the model does not describe the specifics of how to train nor the results once training has happened.

Knowing the process of the tacit to explicit to tacit exchange described in the SECI model does provide an excellent framework for understanding knowledge processes within an organization. What is missing, and what we talk about in this chapter is the results of the training activities and how that relates to the recall of the knowledge an employee receives during the training.

KNOCKNOWLEDGE TRANSFERS

Making successful knowledge transfers have been shown to provide channels to problem solving, goal achievement, and competitive advantage (Smith, 2001). The goal of the knowledge transfer is to generate action by the receiving employee thus making the actions they take based on the received knowledge more effective (Connell, Klein, & Powell, 2003). The key is to make the emphasis of a knowledge transfer the employee’s recall and not just the knowledge itself (Connell, Klein, & Powell, 2003). Emphasis should now be placed on the employee’s ability to recall, transform, and utilize the new knowledge for positive organizational outcomes.

Positive organizational outcomes are becoming increasingly important as most organizations move into global markets. The outcome associated with improving employee memory recall is important to examine and may have the most impact on the success or failure of the organizations strategies and goals. If we want our organizational memories to remain viable we have an obligation to seek methods of improving recall throughout the organization. Will our employees know what they knew? Yes, they will if we do everything in our power as knowledge management professionals to help them recall or remember what they have learned.

Issues, Controversies, Problems

The problem dealing with recall is one of discovering how to train employees in such a way that we improve their recall after the training event. Evidence seems to indicate that the training event presentation methods we use may have an impact on how much an employee will recall. Examination of presentation methods has had some limited research, but the problem is that more research is needed in order to find the best method of training.

The lack of research in this area of employee training recall prevents us from developing a complete picture when dealing with human memory and recall and discovering the best training methods to ensure satisfactory recall of the training by the employee. There may not be one, best, method of training to improve recall, but research has indicated that there are differences in recall ability when different training methods are utilized.

At issue in this chapter is the focus on the type of training presentation which might potentially lead to improved recall. Research into creating training presentations so that a difference may be observed statistically leading to conclusions being developed to explain the differences. Prior research has shown that different presentations methods produce differences in recall.

One research project found that by structuring a training presentation recall was improved (Herschel, Nemati, & Steiger, 2001). Structure was
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defined as creating a training presentation in an orderly manner such as hierarchical, or outline, or etc. It was found that the structure of the training presentation made a difference, at least statistically, in improving employee recall.

Additional research conducted in 2006 utilizing structure, quasi-structure, and non-structure training presentations resulted in a difference statistically between the methods used (Westfall, 2006). A structure presentation (using PowerPoint) was developed in a hierarchal manner whereas the non-structure was created in paragraph form, and the quasi-structure presentation was a combination of the two previous styles. The results of this research suggested that differences in recall are statistically observable due to the differences in the training presentations.

Given several objective statistical factors the indication was that other factors like age, education level, employment status, gender, and income did not make a difference statistically. However, when the three presentation styles were looked at statistically a difference was observed. This observation, although not conclusive, seems to indicate that a training presentation style may influence recall in employees.

Furthermore, in both research efforts outline above, the training was autonomous where there was not a lecturer, or speaker conducting the training session. The employees where trained electronically via videos or automatic PowerPoint presentations. This was done to eliminate outside influences on the training session and resultant recall. As with any research there are many factors to consider and this non-human participation factor will need further examination.

Additionally it must be noted that in both these previous research efforts, the employees were tested for recall very soon after the training exercise which provided for some statistical corroboration or proof that structuring training presentations improve recall. Future research would need to examine recall at later time intervals to distinguish between immediate recall and normal recall over time.

Regardless of the time interval involved in the previous research there seems to be a connection between the style of training presentation used and the successful recall of that training after the training event. This gives researchers additional areas of research in which to prove or disprove that recall can be improved by using different training styles.

Further at issue is that the majority of knowledge management research and development today is geared toward capturing and storing knowledge. The use of networks and relational databases to capture and store knowledge is a burgeoning area of interest. Practitioners involved in researching and creating these knowledge reservoirs continue to have success in improving our capture and storage abilities. Also many researchers create and develop multiple ways to convert stored knowledge into explicit forms with varying degrees of success.

The success of capture, storage, and conversion methodologies while continually improving, usually do not consider in any statistically meaningful way the results of these processes. Thus the recall of training is not researched significantly and this may limit the usefulness of making knowledge available to employees. Research into employee recall becomes one of finding the best way to create our training presentations in such a way that we know with some certainty that improved recall results from our efforts.

Structure, Cognition, and Recall

The methods examined in this chapter are those of organizing knowledge in our training presentations so that we produce some type of improvement in employee recall. In past research it was discovered that organizing knowledge within a training presentation improved recall (Caillies, Denhiere, & Jhean-Larose, 1999). This research
found that simply organizing knowledge explicitly improved employee recall at a later time.

Further it was postulated that organization of knowledge created five unique levels which were:

1. **Generalization**
   a. Main ideas clarified with additional details or examples

2. **Enumeration**
   a. Lists the ideas one after another

3. **Classification**
   a. Groups or segregate ideas into categories

4. **Sequence**
   a. A continuous and connected series of events or steps

5. **Compare/Contrast**
   a. Compares relationships between two or more ideas

Each of these levels gave some type of organization or structure to the training presentations. This finding was significant because a step was made in determining the best way to create explicit knowledge presentations for employee training. Additionally in other research it was found that recall was better when concepts were organized in a hierarchy within the experimental media (Wolfe, 2005).

**Selective Scanning**

A characteristic of previous research endeavors into employee recall was the concept of selective scanning. Selective scanning was expressed as the process whereby employees determine selectively what was important or not important to them when viewing some type of training presentation. Employees tended to look through non-linear (sequenced) media for clues about what was important to the idea or thought presented. This selective scanning was done to make sense of the material and to help employees remember or recall what they had viewed or read at a later time. They weeded out what was not important to their understanding of the material as they perceived it.

Non-selective scanning occurred when the training material was presented in a structured (hierarchical) way which meant that employees did not need to weed out unnecessary material (Eveland, Cortese, Park, & Dunwoody, 2004). Unstructured material encouraged selective scanning and defeated the purpose for having structure applied to the media in use. Therefore it was argued that structure seemed to improve recall because non-selective scanning was part of the cognitive ability of each employee to begin with.

Selective scanning in viewing some type of media has been a skill that has been applied to other types of tasks. Using their ears, for example, employees listened to a presentation and scanned it for relevant clues as to the important points or ideas presented (Eveland, Cortese, Park, & Dunwoody, 2004). If the presentation was structured then selective scanning was not as important for the employee to perform when listening. Also for a visual task that was structured, the need to selectively scan was not necessary. The structure gave clues to the employee as to what was important about the material being presented. However if the same task was presented without structure (sequence or paragraph form) then selective scanning became necessary for the employee to make sense of what they were learning.

The whole idea of selective scanning is important to consider because we all tend to do this daily. We look for clues within the material presented until we have formed some mental process to handle absorption of the material and to facilitate later recall. Since it is common for us to selectively scan, it is appropriate that we consider this process when designing our training presentations.

What this means for the knowledge management professional is that we have to take into consideration selective scanning when we design...
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our training materials. Are we going to make the employee scan for the relevant material or are we going to give them the important material already outlined and indentified? This question is of utmost importance if we wish to make sure our training is recalled at a later time.

Recent studies have examined learning in relation to using training materials that elicit user control and program control methods. User control (Jonassen, 1988) says that each individual is different in their learning capabilities and that no one training presentation is best for a training activity. User control gives the user the control of their own learning abilities and relates to selective scanning in that the user controls the methods and processes in scanning training materials for relevant ideas and concepts. However, some studies have shown some benefit for recall from user control (Kinzie, Sullivan, & Berdel, 1988) while other studies have shown little benefit to user control (Yang & Chin, 1996-1997).

In contrast, program control, places the control with the training material itself. It leaves little control to the user and therefore selective scanning is less important to the user. Eveland and Dunwoody (2001) found that selective scanning was useful in non-structured training material. They specifically used the web as their non-structured material source, but the results indicated that there was selective scanning utilization when the user was not given specific clues to important aspects of the training material.

Selective scanning therefore creates associative connections within the learner as to the important clues or items about the training material. Because the web is based on hyperlinks and hypermedia the thought is that this mimics the associate and selective scanning processes in the human mind (Churcher, 1989). Selective scanning therefore is performed by individuals when there are no distinct clues to the important items in training materials.

All of this means that we as knowledge management professionals must consider selective scanning in the context of our training material development. We must choose to make our training materials in such a way that we either encourage or discourage selective scanning. This chapter makes a case for non-selective scanning training materials because previous research has shown that there is a noticeable difference in recall when structure is used in training materials.

Reducing selective scanning seems to improve recall in employees and this then leads to a better assurance that our organizational memories are correct and remain useful throughout the organization. Additionally we have to ensure that we consider the types of knowledge exchanges we encourage so that we are sure our knowledge exchange endeavors are successful.

KNOWLEDGE EXCHANGES

From prior research it was discovered that knowledge was transferred most frequently between individuals that were “homophilious” or alike. This is important because individuals within an organization are typically more alike than different when given adequate time for organizational acclimatization. This transferred knowledge however was typically more tacit than explicit given the acclimatization process (Rogers, 1995). It is more tacit because it is knowledge gained through observation, interactions, and individual training. This knowledge is not explicit but instead is given from one employee to another directly or indirectly.

To make the knowledge more transferable to “heterophilious” or dissimilar individuals, knowledge needs to be converted into explicit knowledge. This is where knowledge is converted from employee tacit knowledge to some explicit form that is then transferred to others within or without the organization. Communicating employee knowledge has always been vital to organizational goals and processes and when done in a way consistent with socialization factors,
cognition factors, and scanning factors previously mentioned the resultant improvement to recall is confirmed.

As prior research has shown there is a consistent statistical improvement in recall when explicit training presentations are structured in some way to help employees retain knowledge and latter recall that knowledge for use in their normal work environments. The study of how humans learn, remember, and recall is far beyond this chapter, but as noted we can improve employee recall at least in some measureable way leading to improved employee performance. Structuring a training presentation therefore seems to reduce selective scanning which leads to improved recall. The next section deals with how to create a training presentation that improves recall.

Create Training Presentations That Work

The goal of training should be to facilitate learning in employees and improve knowledge recall. This obviously is an important component to any knowledge management strategy. Once we capture the knowledge we wish to retain within the organization we must also be sure to develop that knowledge into useful explicit forms contributing to our employee training initiatives.

Since previous research has not formally defined what type of training presentation is the best, the motivation for us is to prepare a variety of presentations to evaluate which improves recall the best. The trainer must look for clues to which presentation provides the best training style so that it can be copied to other training initiatives within the organization.

The evidence, so far, suggests that structuring a training presentation in some manner improves recall in employees and therefore our task is to find that best training style and use it to drive improvements in employee training recall. This gives us our best shot at improving employee recall and making a difference within the organization.

For an employee to “recall what they knew” we as business leaders, trainers, teachers, and training professionals must strive to provide the best possible training to our employees. We must ensure that we are motivated to seek out and find the best methods for training. This includes current research that tells us that structuring our training presentations in a way that reduces selective-scanning and thereby leading to better recall is important for the organizations we represent.

Since every trainer has a particular style they usually prefer, it is critical for recall improvement success to be flexible enough to consider other means of training. Changing our methods is sometimes difficult, but in light of our commitment to improve employee recall we should endeavor to become as flexible as we can be until we find the best training methods. It is vital to be able to give our employees the best possible conditions whereby they are improving their training knowledge recall.

We may not presently know the optimum style when creating explicit training presentations, but we do know that presentations that are hierarchal or outline in form tend to reduce selective scanning and improve recall. Prior research has indicated this to be the case and we should attempt to reproduce our own training materials to elicit, at the minimum, a statistically verifiable improvement in employee recall.

As indicated in Figure 2 there is every indication that as we reduce selective-scanning within in our training presentations we can measure an improvement in recall. This means we have gone from total selective scanning to non-selective scanning along our recall percentage scale. This chart is not statistically accurate, but only represents our goal of reducing selective scanning and the resultant improved employee recall.

The training materials that present the needed information in hierarchal or outline way produces an increase in employee recall of the material. Therefore if we give our employees the required clues to the importance of the needed information
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we can be sure we are giving them a chance to assimilate the information in a meaningful way so that they can recall it when needed. We reduce selective scanning so that we do not force the employee to make assumptions about the information we wish to convey. We take program control of the training presentation so that user control is eliminated as much as possible.

The most important thing to remember here is to provide the required clues and emphasize the relevant or important information within the training material. Be sure to include the information that gives the employee the best possible information scenario so that they can have all the advantages they need once they recall the information for use in their daily work.

FUTURE TRENDS

What does all of this do for us as we are moving through the 21st century? The answer is that we are just now trying to research and discover more about how training affects recall and what best methods are needed to ensure we are successful trainers. Successful trainers are those that become initiators of discovery into finding the best methods for structuring explicit knowledge training materials and presentations.

As more and more employees seek better paying and more fulfilling jobs, especially in the United States where employee turnover rates are high, we must not only learn how to capture knowledge before those employees leave, but we must also learn how to convert that knowledge into useful training materials. With our organizational success being tied up within the minds of our employees we should be motivated to develop better training initiatives and encourage training successes.

As more and more organizations enter or expand into the global market the potential for lost knowledge becomes greater. The mobility of the workforce worldwide, in most cases, will increase and the magnitude of losing valuable organizational knowledge is increased. When an employee can move easily between organizations they may take valuable knowledge with them that if not captured is lost to the previous organization. So not only is capture of knowledge critical, once the knowledge is captured it must be made available to incoming or existing employees so
that the knowledge may be used to continue successful operation of the organization.

At some point in the future we will inevitably understand knowledge, knowledge capture, knowledge conversion, and knowledge training much better. We will have hopefully maximized our knowledge management strategies so that we encourage and expect improved employee recall.

The economic impact of the $2 trillion dollars spent yearly on training cannot be ignored. With this much money spent on training employees we should be sure we are making the most of the dollars spent. This means that we are not only encouraged, but often mandated by our organizations to spend our training dollars wisely. The results of our conscious efforts to improve employee recall will be noticed when employees are able to make the organization’s performance better due to being able to recall key and important information because of our training practices.

**FUTURE RESEARCH**

Future research conducted formally in academia or in business should seek to discover the best way to train an employee that leads to the best recall capability within that employee. Without recall the employee has only benefited temporarily from the training and the organization cannot be sure they will reap the rewards of the knowledge training. If the employee does not recall what they have learned the organization will not see the results reflected in productivity, profits, or moral.

Additionally in the future there needs to be an effort exerted to find out the connections between successful recall, moral, and motivation of the employee. The research must consider all of these factors when looking at recall success or not. If an employee recalls the training well, but it does not provide any benefit to them or to the organization this needs to be discovered quickly so that changes can be made to our knowledge training strategies and tactics.

Furthermore future research might look at the reasons and causes of employee turnover. These causes or reasons might be eliminated which would improve the longevity of the employee and the time we have available to capture, store, and convert knowledge leading to successful training. When a global market is available for employees to move from one organization to another at will, there will be huge losses of knowledge which benefits no one. Since the knowledge moves with the employee there must be a concerted effort to figure this situation out so that we may learn to reduce knowledge losses due to turnover.

Finally we must strive as knowledge trainers to be vigilant and aware of our responsibilities to the organizations we work for and to the employees we train. We should be motivated to improve our training methods when needed and to ensure successful employee recall so that our trainees will truly “recall what they knew”.

**CONCLUSION**

As previously stated, we want our employees to “recall what they knew” and this involved looking at past and present research into employee knowledge recall. We found that this type of research is much more limited than other types of knowledge management research. We emphasized the importance of knowledge recall research and the benefits it brings to an organization. Finally we examined the future research possibilities to seek better understanding of how to improve employee recall.

As with any research process there is always room for improvement and this situation is no different. Researchers must be prepared to test many and varied methods and styles of training to be able to draw conclusions and make recommendations to organizational trainers and training managers. The goal of the research is to, at the least, find
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a way to statistically prove that we can improve employee recall after training events. At the most we wish to provide a basis of understanding for trainers and managers that allow them to capture, maintain, and utilize organizational memories.

The question asked in this book is: “Building organizational memories: Will you know what you knew?” and the answer is yes we can know what we knew by ensuring that we recall what we have learned. The organizational memories contained within our employees minds must be captured, stored, and then disseminated explicitly to other employees. This ensures that we are maintaining our collective knowledge pool and providing positive organizational outcomes well into the future.

Lastly, as we learn more about knowledge and its impact upon our organizations, we will find that we have contributed to the success of our respective organizations when we have trained our employees well. Well trained employees contribute more to the organization and they do this by utilizing what they knew or what they have recalled from all the training they have received. If we can improve recall we can improve our organizations and truly; “Know What We Knew”.

REFERENCES


