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Memory of Events and the Practice of Teaching

To study a subject best—understand it thoroughly before you start.

Finagle's Rule for Scientific Research (Dickson 1978, p. 58)

 **EVERYDAY** events and incidents become part of our memory and can determine to a large extent our behavior in diverse situations. Neisser (1982a) contends that “everyone uses the past to define themselves. Who am I? I have a name, a family, a home, a job. I know a great deal about myself: what I have done, how I have felt, where I have been, whom I have known, how I have been treated. My past defines me, together with my present and the future that the past leads me to expect” (p. 13). Neisser argues the importance of studying how people use their past experiences to deal with present and future situations. The use of past experiences may be perceived as a central feature of private and professional actions.

In professional contexts, one might be required to predict a future event or to explain a past event. “In both cases, people may actively attempt to organize the information they received in a way that permits it to be understood in terms of a previously formed event schema” (Wyer and Scrull 1989, p. 247).

Professional memories can be conceived as constituting a central part of the wisdom of practitioners, with the potential of serving the individual, as well as his or her peers. In utilizing this wisdom, one relies on memories of past events. Memory of events is conceived herewith as providing the basis for the construction and organization of teachers' personal professional knowledge in a way that will allow them to use this knowledge.

The study of teachers' professional memories is, therefore, important for understanding the development of the wisdom of practice. In Neisser's words: "Everybody who is skilled at anything necessarily has a good memory for whatever information that activity demands. Physicists can remember what they need to know to do physics, and fishermen what they need for fishing; musicians remember music, art critics recall paintings, historians know history. Every person is a prodigy to his neighbours, remembering so much that other people do not know. We should be careful in what we say about memory in general until we know more about these many memories in particular" (Neisser 1982a, p. 17).

What are some insights about memory that can inform the study of teachers' professional memories? The following sections present some basic concepts in relation to teachers' memories and the context of teaching.

EPISODIC, AUTOBIOGRAPHICAL, AND SEMANTIC MEMORY

Cohen (1989), consolidating an impressive array of research concerning everyday memory, notes the basic distinction between episodic and semantic memory made by Tulving (1972). According to Tulving, episodic memory consists of personal experiences stored as information about episodes or events; these memories are context bound and refer to specific times and spaces, and to relations among events. Semantic memory, on the other hand, consists of general knowledge about the world that is organized in schemas or categories and is context free; its retrieval does not usually involve the experience of remembering. Cohen (1989) makes an important point that is highly relevant for the study of teachers' memory: "The two forms of knowledge are not separate compartmentalised structures but are in an interactive and interdependent relationship. Semantic knowledge is derived from episodic memories by a process of abstraction and generalisation" (pp. 114–15).

In other words, episodic memory about specific events, based on personal experience, can be transformed into generalized knowledge about the objective reality of the world. The issue of this transformation in the context of teaching will be examined later on.

If we accept the definition of episodic memory as concerning the memory of past personal events, we may view it as being equivalent to autobiographical memory. According to Cohen (1989), "Autobiographical memories are episodes recollected from an individual's past life" (p. 117).

Robinson (1986) speaks about autobiographical memory as "the memories a person has of his or her own life experiences" and argues that "life memories tell us something about remembering and about the rememberer" (p. 19). The study of teachers' memories of their professional life seems an appropriate endeavor for learning about memory and remembering, as well as for learning about teachers, the rememberers, and their work.

Teachers' work consists of a chain of both routine and unusual experiences. Over time, experiences become recollections of particular episodes in the past. Brewer (1986) argues that personal memories appear to be a "reliving" of experiences, at specific times and locations, accompanied by reports of visual imagery, thoughts, and felt affect. It is interesting to note that personal memories may be considered by the rememberer to be a true record of the originally experienced event, though this is not necessarily the case. In the following chapters it will be shown how the personal memories of retired teachers demonstrate the features of visual imagery and felt affect.

Conway, in his book *Autobiographical Memory* (1990), characterizes autobiographical memories as being high in self-reference and personal interpretation, having variable veridicality, and being accompanied by context-specific sensory and perceptual attributes and, frequently, imagery.

THE STRUCTURE OF MEMORIES

Researchers in the memory domain postulate that memory is not amorphous and cannot be perceived as an undifferentiated mass of remembered items. Scholars propose different structural systems for organizing memories. Cohen (1989) sums up some of the findings as follows:

The consensus of the findings indicates that organization is predominantly categorical, with types of events or actions being represented at different levels

of generality/specificity. When people try to recall a particular episode from the past, retrieval processes access the level of categorisation that provides the optimum context for search. This optimum level of categorisation is one that is rich and specific enough to generate useful cues and reminders. Particular episodes that are sufficiently distinctive, novel, deviant, or recent are not absorbed into generalised representations but are represented at the most specific level where they can be identified by specific tags. (p. 128)

Other organizational schemas are possible, such as the array of memories along a time line, or in terms of persons one knows (Brewer 1986).

Neisser (1986) sees similarity between the uses of the concept of “nesting” in ecological descriptions of the real world and its uses in understanding the structure of memories. Things are components of other things without any clear hierarchy because of the many transitions and overlaps. The nested structure of memories may play a crucial role in their recall. “There are links between the levels: When one of them becomes active in recall I can recall others that are nested inside it, or in which it is nested. Most recall moves either downwards from context or upwards from particulars” (p. 77). Neisser’s ecological theory of nested autobiographical memory might have implications for the study of teachers’ memories and might serve to explain teachers’ individual styles of recall—downward from context, or upward from particulars.

We shall see, later on, that generality versus specificity as well as chronological or interpersonal organizational schemes, can be discerned in the recollected events provided by retired teachers.

SCRIPTS

Not all personal memories are specific; some are generic personal memories. According to Brewer (1986), “Repeated exposure to a set of related experiences can give rise to a generic image of the experiences” (p. 30).

Brewer’s description of “generic personal memories” is close to the notion of “script”—representing knowledge about events

and experiences acquired over time (Schank and Abelson 1977). Cohen (1989) defined a script as "a general knowledge structure which represents the knowledge abstracted from a class of similar events, rather than knowledge of any one specific episode. A script consists of a sequence of actions which are temporally and causally ordered and which are goal directed" (p. 110).

People are conceived of as acquiring manifold scripts for familiar experiences, like going shopping. Scripts are guidelines for understanding life events; they provide a framework for remembering events and for acting upon these memories. Scripts can be enormously important in daily life. According to Cohen (1989), memory for personal experiences "provides us with a store of 'recipes' for handling current problems and current situations. We know how to behave in social and professional contexts, how to cope with practical problems like changing the wheel on a car, or booking tickets for the theatre, because we remember how it worked out last time we had a similar experience" (p. 109).

What can we learn from the notion of "script" to account for the wisdom of teachers as practitioners? How are scripts related to teachers' routines (Leinhardt, Weidman, and Hammond 1987)? These questions will be dealt with in chapter 4.

Recent developments of the script model have been suggested by Schank (1982), who concludes that memories can be organized at different levels of generality. Memory is conceived as dynamic, allowing for constant reorganization of memory structures in light of changing requirements. Common elements may be represented in memory at a more general level and can be incorporated into diverse scripts when required. In teachers' practice, generalized actions can include, for instance, "managing classroom order and quiet," which can be incorporated into the script "giving a test" or "quiet reading time."

Schank (1982) has suggested even more general representations. These are general themes that may serve to organize memory of events, such as the theme "success." Themes allow us to recognize similarities between seemingly different events. The theme "success" might come into mind while one is trying to increase student motivation. One might be reminded of one's own lack of motivation to learn skiing, and of the impact of gradual successes on one's readiness to devote time and effort to this endeavor.

Scripts, general elements, and themes do not exist in a vacuum; they are determined by the social context, as well as by one's personal history. In the case of teachers' professional memories, "social context" is to be understood as pertaining to the culture of schools, the culture of teaching, and the wider cultural frame in which teachers live. The impact of context on teachers' memories is dealt with in chapter 3.

If we accept the basic premise that professional knowledge depends to a large extent on memory of past events, we must ask ourselves what are the factors determining recall.

FACTORS INFLUENCING RECALL

Everyday wisdom presents us with contradictory statements concerning recall. It is sometimes claimed that if you can't remember something, it couldn't have been important. On the other hand, some declare that we always remember best the irrelevant. What does research on memory have to say about factors influencing recall?

The issue of recall of personal memories has interested a number of researchers. Brewer (1986) summarizes the findings regarding the characteristics of events that are well recalled. These characteristics are uniqueness (Linton 1979; White 1982), consequentiality (Rubin and Kozin 1984), unexpectedness (Linton 1979; Rubin and Kozin 1984), and being emotion-provoking (White 1982; Rubin and Kozin 1984). Conversely, poor recall results from events that are repeated or trivial (Linton 1975).

According to Brewer (1986), the development of generic personal memories comes at the expense of individual personal memories. Therefore it is more difficult to remember any one event if it is an example of a series of similar occurrences.

We'll find that teachers tend to remember unique experiences in their past, as well as events that were highly consequential for their practice. An interesting question concerns the affective nature of teachers' memories. Do teachers tend to recall and recount more pleasant than unpleasant events? Research on memory of events tells us that pleasant events are remembered better than unpleasant or neutral events (Wagenaar 1986). Wagenaar's study corroborates Linton's (1986) finding concerning the rarity of "negative" memories. Professional memo-

ries might not exhibit this trait of omitting unpleasant events, probably because of the different framing of recall. It may be important for professionals to remember failures as well as successes, as guides for further action.

Interesting findings for the purpose of the present study are those of Rubin and Kozin (1984), who asked students to describe three of their clearest memories, rating these for the following characteristics: national importance, personal importance, surprise, vividness, emotionality, and how frequently they had discussed them. The most often mentioned events concerned injuries, sports, and meetings with the opposite sex. The vividness of memories correlated with their rated importance, degree of surprise, and emotionality. It seems that traumatic and uniquely significant experiences tend to leave stronger traces in memory. Teachers' memories reflected this tendency. Many of their stories are vivid descriptions of traumatic or other significant past experiences.

According to Reiser, Black, and Kalamaniades (1986), "To find an event in memory, it is necessary to construct a plausible scenario for that event's occurrence, thus using essentially the same mechanisms necessary to understand the original event. Retrieval is therefore a process of reunderstanding the experience" (p. 101). This approach to memory provides a possible insight into the link between teachers' past experiences and their future actions. Every time teachers rely on their past professional experiences to solve present problems, the very act of retrieval constitutes a process of reflection and "reunderstanding," thus enabling the rememberer to act deliberately and appropriately in the new situation.

EXPERT KNOWLEDGE AND THE ROLE OF MEMORIES

It was stated above that memory is the basis of action in social and professional contexts. How, then, do experts and novices differ regarding the realm of memory? Cohen (1989) claims that "when someone ceases to be a novice and becomes an expert in some particular knowledge domain, changes which are both qualitative and quantitative have taken place in the knowledge structures stored in memory" (p. 162). Some of these changes

are considered to be similar in different areas of expertise. Experts know more than novices, but they are also more able to acquire and retain new information. McCloskey and Bigler (1980) argue that experts are better than novices at organizing stored knowledge into subsets. Cohen (1989) summarizes existing research in different knowledge domains that confirms that expert knowledge is more highly organized than novice knowledge. Expertise does not improve your memory in general; experts only have "better memories for meaningful properly structured information in their particular knowledge domain" (p. 164).

Fivush and Slackman (1986) found that older children are able to flexibly reorganize their event knowledge to meet the demands of changing tasks. Younger children, on the other hand, can use their event knowledge only in canonical form. This finding may be helpful for understanding the differences between expert and novice teachers. Novice teachers may tend to use their limited event knowledge concerning teaching situations in the same way that young, inexperienced children use their event knowledge. With the growth and elaboration of their "teaching scripts," expert teachers, like older children, may be able to reorganize their event knowledge in appropriate ways to match changing classroom situations.

One of Linton's (1986) interesting findings in her longitudinal autobiographical memory study was that when classifying her memories into two major themes—professional/work and social/self-centered—she found that all professional/work items were recalled before any social/self-centered items were. This finding may be interpreted as demonstrating the centrality of professional memories in one's self-schema. The study of teachers' memories of their professional lives is based on the assumption that professional memories are, indeed, highly significant in teachers' lives and that the study of their retrieval can provide insights into the complexities of teachers' expertise. Such a study raises the issue of the veridicality of memories of events. Theories of memory differ in their approach to this issue.

THEORIES ABOUT MEMORIES

Two dominant theories of memory are the copy theory and the theory of reconstructive memory. According to the first ap-

proach, personal memories are copies of earlier experiences—"a direct vision of the genuine past" (Earle 1956, p. 10). Brewer (1986) claims that copy theories were adopted for three reasons: a view of memory as based on the fading of original sensation, and a strong belief in the accuracy of one's personal memories, and the fact that personal memories include irrelevant details.

Recent studies have provided evidence that contradicts the assumptions of copy theories of personal memories, suggesting instead that memories are nonveridical reconstructions of earlier experiences (Linton 1982; Neisser 1982b). This evidence is based on gaps between recorded memories and the original event. Moreover, Nigro and Neisser (1983) found that personal memories may be reported from the perspective of an observer and not from the perspective of the individual who had experienced the event originally, and that therefore these memories could not be copies of the original perceptions of the person remembering the event.

Neisser (1986) claims that

recall is almost always constructive. No matter how well you remember an event, the information available will not specify all the context that once gave it meaning, or all the molecular actions that were nested inside it. If you care to try, you can build on what remains to reconstruct some of what is missing. How much you make up and how much you are content to omit will depend on your situation at the time of recall and on your intention. . . . Perhaps the smallest amount of elaboration takes place when you are remembering silently for your own purposes; more appears as soon as you offer an overt account to another person. (p. 78)

Neisser's position denies the possibility of complete copy memories because of the complexity and richness of each experienced event, which is not specified during recall and has to be reconstructed by the rememberer.

Brewer (1986) tries to reconcile between the two opposing approaches and argues for a "partial reconstructive view." Brewer argues that because perceptions are not always veridical with

respect to reality, one cannot assume that personal memories are uninterpreted copies of one's perceptions. Yet Brewer proposes that more-recent memories are, in fact, "reasonably accurate copies of the individual's original phenomenal experience" (p. 43). On the other hand, Brewer states that "scheme-based reconstructive processes occur in many forms of memory and there is no reason to believe that personal memory is isolated from these memory processes. One might expect that childhood memories that have been recalled and discussed a number of times would be strong candidates for reconstructive processes" (p. 43). He concludes that "with time, or under strong schema based processes, the original experience can be reconstructed to produce a new nonveridical personal memory that retains most of the phenomenal characteristics of other personal memories (e.g. strong visual imagery, strong belief value)" (p. 44). This process of reconstruction explains the fact that even memories of long ago carry the flavor of recency of experience. This "flavor of recency" is highly pronounced in the recollected professional events of teachers.

What does this controversy mean for the study of teachers' memories? Because of the background of the participants in this study, all of whom were retired professionals, none of the collected memories were recent. So we may safely assume that the process of reconstruction has shaped their stories. Still, their memories are perceived in this study as reflecting real and significant events. As Neisser (1986) states: "We remember the moment when we first heard that Kennedy has been shot because it links us to a historical occasion. The same principle probably applies to most of our vivid and well-preserved memories, though their significance is usually personal rather than political" (p. 79).

In chapter 3 we shall see that the choice of remembered events by teachers, and the vividness of their recall, can be explained on the basis of personal, as well as social, significance. Though autobiographical material may not be quite accurate, it does reflect the integrity of one's life.

EFFECTS OF AGE

Because all the respondents in the present study were retired teachers, it is important to deal with possible age effects on

their processes of retention and retrieval. A number of studies show common basic patterns in recall: namely, a childhood amnesia component for the earliest years of one's life; a simple retention component for the most recent twenty to thirty years, with the mean number of memories declining as a function of age; and a reminiscence component for people older than thirty-five. Reminiscence consists of a peak of memories during the ages of about ten to thirty. In Franklin and Holding's study (1977), all fifty-, sixty-, and seventy-year-olds showed reminiscence in the ten- to thirty-year-old range. Cohen and Faulkner (1988) showed that this peak concerned highly significant life events, which tend to occur during this time of life.

We may assume, therefore, that the respondents in our study were at an age of reminiscence, an age in which some kind of life review takes place. Because they were requested to record only their professional memories, they tended to focus on their first years of practice, when they were about twenty to thirty years old and were likely to have experienced highly significant professional developments.

CONTENTS OF AUTOBIOGRAPHICAL MEMORY

Memory of past events is assumed to guide future actions. Therefore it is deemed important to ask about the content of teachers' memories. Linton (1986) claims that there is much to be learned from the survey of the contents of memory. From the point of view of teachers' memories it is important to know which memories tend to survive, what forms they take, and how they shape teachers' professional actions. Studies of their personal histories show the importance of preservice teachers' critical experiences in their past (Knowles and Holt-Reynolds 1991). Student-teachers' experiences as students may constitute negative, as well as positive, examples of teaching. According to Knowles and Holt-Reynolds (1991), "These stories or vignettes, for that is the form in which such memories are retold, comprise an essential foundation for preservice teachers' knowledge of classrooms, teachers, students and instruction, which they then use to think about the potential value of ideas they encounter in course work as they develop knowledge about teaching" (p. 91).

Kelchterman (1991) found that some past experiences were perceived by teachers as having crucial influence on their self and on their professional behavior. Such experiences can be called "critical incidents." Kelchterman states that they "are often described as very detailed anecdotes with an exemplary, illustrative, legitimate or explanatory function" (p. 7).

In different studies concerning the teaching profession, critical experiences, incidents, persons, or phases are the cornerstones of the contents of professional memories. The overall mood of these personal memories may be either positive or negative. This phenomenon contradicts Linton's (1986) finding that "the contents of memory as represented by the recall protocols are curiously silent about specific negative events" (p. 59).

It may be that this is a salient difference between professional memories, which include the negative aspects of events, and purely personal ones, which tend to overlook them. Still, Woods (1987) emphasizes the positive aspects of teachers' memories and states that "as well as facilitating expression, therefore, the life history permits a celebration of the self, and enhancement of the primary rewards of teaching" (p. 128). Many of the stories told by retired teachers may be viewed as being about "critical incidents." These incidents may refer to past negative, and even traumatic, experiences; alternatively, some stories seem to celebrate teachers' successes and the rewards of teaching.

STORIES IN AUTOBIOGRAPHICAL MEMORY

Of special importance for the present study is an approach to autobiographical memories as "stories." Stories are, as Elbaz (1991) argues, "that which most adequately constitutes and presents teachers' knowledge" (p. 3). This approach explains some of the contents to be found in accounts of memories. As Robinson (1986) has noted, "From the beginning biographers and historians have used personal recollections to construe the individual and collective past. . . . According to this view, life memories are time capsules, records of an unrepeatable past. As such they can be used both to recount the past and to teach lessons for the future. The intimate association between memory

and narrative arises from this urge to use the past to instruct present and future generations" (p. 19).

The narrative form has been shown to shape the recollection of memories. Brown and Kulik (1977) content that "flashbulb" memories, which are extremely vivid and detailed, have a canonical structure that includes the following components: location, activity, source, affect, and aftermath. According to Neisser (1982b), these are the product of "narrative conventions" that govern the format of storytelling. Barclay (1986) reports on a study in which the subjects were asked to use a format derived from "story grammar" (Stein and Goldman 1979) to record three memorable events a day, for five days each week, for four months. The format included the following components: context, description of the event, and the emotional and behavioral reaction to or evaluation of the event. We shall see that this story grammar can be found as well in teachers' recollections of professional events.

The notions of "story grammar" or "narrative conventions" do not suffice to portray the complexities and richness of autobiographical memories. A more in-depth view is provided by Howarth (1980), who suggests that autobiographies may take one of three forms: oratory, drama, and poetry. Oratory form is normative in theme and didactic in purpose, and it presents some rules of conduct. In the dramatic form, the authors dramatize their story as they tell the events of their life in great detail. The poetic form does not convey ideological messages, nor does it portray "life on a stage." Rather, the author communicates her or his search for meaning and involves the reader in this search.

Teachers' personal professional memories may reflect these different autobiographical forms, shaping the content and form of their stories.

COLLECTING TEACHERS' MEMORIES

The research presented in this book is about everyday memory based on teachers' introspection, the professional memories of a sample of retired teachers. The recorded events are highly meaningful to the participants in the study. Data was collected by the researchers in familiar settings, such as a common

room in the university or private homes, and not in laboratory settings. Almost all material was collected orally. This method was chosen because of the great difficulty of obtaining written responses. Moreover, the oral mode was considered more appropriate for telling one's story. The stimulus question was this: "What can you tell me about recollected events of your teaching practice?" The number, content, and format of events was left open so as not to limit the process of retrieval. The flow of the stories was not interrupted by additional questions, so as not to influence the stories in any way. Teachers' words were recorded verbatim. Forty-three teachers participated in the study. Altogether 135 events were collected; of these, 17 were submitted in writing. The proportion of schoolteachers and kindergarten teachers who had submitted their recollections in writing was about equal to their proportion in the participating group.

The question itself was meaningful to all respondents. Because of its link to the personal history of the retired teachers, it is difficult to document the validity of responses. Yet because of the nature of recorded events, which tended to relate to historical events and concrete contexts of the educational system, the ecological validity of teachers' stories could be corroborated by the researchers.

Further data was collected through lengthy and repeated interviews with fifteen teachers. Most interviews were conducted individually or in small groups. It is interesting to note that all teachers participated in the study with great enthusiasm. They enjoyed the opportunity to relate past experiences and to share their stories and insights with others.

Fifteen retired teachers provided detailed scripts of lessons and discussed the determinants of memorability. One of the major topics of interest in these discussions was the nature of professional knowledge, its development over time, and the role of experience in its growth.

THE RETIRED TEACHERS' BACKGROUND

Who are the participants in the study of teachers' professional memories? Of the forty-three teachers who participated in the study, eleven were kindergarten teachers, twenty-nine were elementary school teachers, two were high school teachers, and

one had taught in a teacher education college. Of the former high school teachers, one was male, all others were female, reflecting the predominance of women in preschool and elementary educational establishments. Twenty-six of the participants were educated in teacher education colleges. One kindergarten teacher, nine elementary school teachers, two high school teachers, and the teacher-education-college teacher, had earned a B.A. degree. Four elementary teachers had the M.A. All had teaching certificates issued by the Ministry of Education. They had taught in various locales. Twenty-three teachers had taught only in cities. Seven had taught in villages, two on a kibbutz. Six related stories of their experiences in small development towns that were inhabited mainly by immigrants. Five teachers recalled events that had occurred while they were teaching in temporary camps that housed newcomers to the country. The narrators tended to choose those sites in which they started out as teachers, sites that constituted the background for the unfolding drama of their early experiences.

SUMMARY COMMENTS

This chapter presents some central concepts and theories, concerning memory of events and autobiographical memory, that are relevant to teachers' professional memories: episodic and semantic memory, scripts and their role in human action, the structures of memory of events, and the processes of retrieval and recall. The copy theory of memory was compared with the reconstruction theory. Possible relationships between the nature of autobiographical memory and the professional development of teachers were considered. The narrative mode of autobiographical memories was emphasized.

In the following chapters we will pursue several aspects of professional memories and their links to the growth of teachers' personal knowledge.