Charles A. Ahern · Kenton de Kirby

Beyond Individual Differences

Organizing Processes, Information Overload, and Classroom Learning

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This book is dedicated with love to Millicent Horne and to the memory of Stanley Horne.

Charles A. Ahern

Preface

My training is in the neuropsychology of learning, in the manner in which brain functioning influences how people acquire knowledge and skills. While most neuropsychologists provide assessments or conduct research, the focus of my career has been on intervention, on working in an ongoing way with children and adults who have some kind of difficulty in learning.

In the history of neuropsychology, a pattern has been repeated many times. Observations made of those with dramatic cognitive difficulties have ultimately contributed to our understanding of the nature of learning and brain functioning in all of us. My own clinical practice has allowed for observations that followed this pattern in a particular way. The work I have done with individuals struggling with learning has pointed to – placed in relief – certain fundamental issues which appear to be relevant to all. As background, I offer the story of that work and how I came to write this book.

The story begins with my first meeting with an 8-year-old boy named TJ, which took place while I was studying neuropsychology at Wake Forest Medical School. I first learned about TJ during neurology grand rounds – a meeting at which physicians discuss notes concerning a specific patient. TJ, I learned, suffered from abnormal brain development due to a congenital condition. His symptoms included profound difficulties with memory and attention. His memory deficits were of such severity, in fact, that he was considered amnesic. It was reported that he had not learned any math or reading through the second grade in his special education class. Indeed, despite concerted and varied efforts to teach him basic academic skills, he did not show evidence of having learned any academic material at school. Prospects for TJ's learning in and out of school, based on his brain anatomy and history, were considered dismal.

Given his brain abnormalities, from a certain perspective it was not surprising that TJ had not learned at school. However, it was clear in listening to the notes that he nonetheless had done considerable learning in his life. Though the presentation was about the neurology underlying his inability to learn, my attention was drawn to evidence of learning implicit in the brief social history offered as part of the presentation. It was reported that he engaged in conversation and related well with

others, which reflected that he had learned vocabulary and developed language skills, including, for instance, competence with the complexities of syntax and grammar. Indeed, later testing showed verbal language skills and vocabulary to be within normal limits of development for his age. He was described as polite, charming, and engaging, and that he was perceived this way meant he had clearly learned many unspoken social rules as well. Though learning to read had thus far been beyond his grasp, it occurred to me that being literate would give him considerably more freedom in life, helping him to manage his memory difficulties by keeping notes and schedules.

As I walked back to the office, I said to Dr. Frank Wood, the head of the Neuropsychology Department, "We ought to teach that boy to read." Although my proposal might have sounded ludicrous to many of the distinguished physicians at the grand round presentation, it sounded possible to him. Dr. Wood knew from his own clinical experience and research that even amnesic individuals have some capacity to learn and remember. He answered simply, "Do it."

Soon I was meeting with TJ twice weekly. He very much wanted to learn to read but was understandably discouraged – in the past, nothing had seemed to work. Though strangely confident myself, I knew there was no playbook describing how to teach a boy with his cognitive difficulties how to read; his condition was extremely unusual. Forging ahead despite our reservations, TJ and I undertook to follow the sequence of a standard reading acquisition program.

I was surprised by TJ's initial success – he clearly had the capacity to make the auditory distinctions fundamental to reading – but the first few months were filled with instances of apparent learning and then forgetting. He would appear to have learned something substantial about a particular letter–sound relationship, and then later, by the end of the session or in a subsequent session, he would have forgotten it. He would seem to have mastered particular phonemic skills – for example, isolating the last sound of a word – and then in later sessions lose that mastery, performing it correctly sometimes, but not others.

The first several months consisted of trying to understand what was preventing him from holding on to new information. That TJ had memory problems was beyond doubt, but this nonetheless struck me as an insufficient answer. I believed that his failure to learn to read – to hold onto the skills that he grasped for a brief period – was not the inevitable result of his weaknesses, but rather that TJ simply required the right conditions to learn, and that those conditions had not yet been found.

Our initial setbacks forced me to shift my focus from the technical aspects of the reading intervention program to the subtleties of TJ's effort to learn. I began to notice that he would often appear to be "wiped out" within minutes. It would make sense, given his cognitive weaknesses, that TJ's mind was particularly sensitive to being overworked. Over time, I noticed that particular signs often preceded being "wiped out": a blank look, briefly averted eyes, and minor errors of inattention. I began to use these as cues to stop, and this seemed to help, but – as I soon realized – I was only halfway there. I intuited that I had to find a way to stop before those signs appeared. This became a topic in an ongoing dialogue between us – when to take a break, how long a break was needed, when to say we were done for the day.

I developed a bias toward stopping too soon rather than too late. Sometimes this meant taking a break even when we were excited about how well he was doing.

We usually worked in increments as small as 3–5 min, with ample breaks between. I still remember feeling that we should be doing more – stopping after such short periods was deeply counter-intuitive – but these were without doubt the conditions under which he could make the most rapid gains. Not only did we shorten the periods of work and interject plenty of breaks, we also reduced the pace. For TJ, this meant pausing between each item, giving him the time he needed to think, to let what he just learned settle in. It felt natural to slow down with TJ, but not as much as he sometimes needed. The ideal pace seemed to vary from day to day and even minute to minute, and it almost always took a conscious effort on my part to work with TJ at the pace he needed to learn. I had come to understand that working for too long, or covering material too fast was somehow undercutting TJ's learning – causing him to forget.

Through trial and error, and careful observation, I discovered one more important parameter in my work with TJ: the importance of taking care in switching between activities or topics. I learned, for instance, that switching types of practice exercises could easily create confusion. Often, I failed to realize that I was forcing him to make a significant mental shift. What I might consider a closely related exercise on the same general concept might represent two distinct topics to him. Switching without giving any attention to helping him make the necessary mental adjustment could leave him completely lost. The first topic often got mixed up with the second, sabotaging the learning process for both.

I realized that I needed to be more aware of these shifts, and to make sure TJ was clear on the first concept – and that he had time to consolidate what he had just learned – before moving on to the second. For TJ, consolidation of new information took time, and trying to hurry the process along simply meant he didn't learn. When we did move on, I found that making the shift explicit greatly helped him make the transition smoothly, so that the new information didn't interfere with what he had just learned. This meant comparing the new and the old, discussing their similarities and differences so that he would be able to distinguish them in his mind.

Together, making these adjustments led to dramatic results. After the next 20 sessions over the course of three and a half months he was reading words, and within a year he was reading at grade level. This was a remarkable change and one that many would have considered impossible – a boy who had shown no capacity for acquiring reading skills or any other academic skill had become a proficient reader. To this day, TJ is an avid reader.

Of course, this was a deeply gratifying experience and a profoundly interesting one as well. I was thankful that we had found a way to help TJ learn to read, but I was not yet aware of any more general importance. In fact, at the time, I considered this as a unique experience in every respect. And, in many ways it was unique. TJ's developmental history was rare and his cognitive deficits unusual. However, my work with TJ sensitized me to issues about the very nature of learning, which would recur frequently as my experience in the field continued. I was being pointed in the direction of some very important insights. But it would take me years to fully understand and articulate all that I learned from this experience.

The critical clues I had received are clear to me in retrospect. For one, working with TJ illustrated vividly that it was possible to appear to learn without really doing so. Our work together not only alerted me to this possibility, but got me in the habit of asking what conditions might make the difference in learning. What was it, I wondered, that distinguished those times when new information took hold for TJ and those in which no lasting effect was made? Whatever it was, it was not readily apparent in the moment. And in light of our success, it was clearly not a question of him lacking the requisite cognitive skills for reading acquisition.

Some years later, when I set up a private practice, I began receiving referrals to work with students with learning difficulties in mainstream schools. Because I am trained as a neuropsychologist, I was often sent students who were not helped – or assessed as not likely to be helped – by typical interventions. These ranged from students with complex learning difficulties as a result of multiple cognitive weaknesses to students whose difficulties in school were far out of proportion with the mild weaknesses identified. These students' deficits – though significant in many cases – were nowhere near as debilitating as TJ's, or those of other students I had worked with. Yet as I went about assessing the reasons for their difficulties and trying to understand what would help, a surprising pattern emerged. I often found myself noticing issues that my experience with TJ had first sensitized me to, and returning to the kinds of questions that I had first asked in relation to TJ.

Over time, I saw that being sensitive to these issues – to a consideration of whether the student is truly learning or only appearing to do so, and a curiosity about what distinguished one from the other – proved frequently helpful and sometimes critical. Many of these students would appear to have learned something and yet evidence would later emerge that the material was not clearly remembered, and was not fully available to be built on in future lessons. Because these students did not have memory deficits as severe as TJ's, they were generally better at covering up when they hadn't learned something – they could better give the appearance of remembering or understanding, even when they didn't. My experience with TJ had made it possible to detect this phenomenon in far more subtle manifestations.

Despite the differences between TJ and these students, I noted another underlying commonality. These students had the cognitive capacities necessary for learning – as TJ had the capacity to learn to read – even when they were not doing so. And to my surprise, I found that recalling the basic issues that had proven essential in helping TJ – being careful not to work too much or too long without a break, being mindful of the confusion that can accompany shifts in topics or activities – also proved helpful with a wide variety of students.

In the course of my clinical work, I began to elaborate on these early insights, trying to understand why this forgetting was occurring, and to ascertain more precisely and understand more thoroughly the various conditions that might make the difference. As I addressed these issues in collaborating with teachers – and, eventually, shared my evolving understanding in presentations – I found that a good number of educators seemed to resonate with the basic issues I was pursuing.

Many teachers stated that the concepts were helpful in understanding certain puzzling students. Just as commonly, teachers commented that these ideas seemed

of general importance, that they were helpful in classroom teaching. Some felt intuitively that these ideas seemed to address a wider phenomenon, in which students, on the whole, were learning material less thoroughly, thinking less deeply, and showing less enthusiasm and investment in the project of learning than they had in previous eras. This feedback shed new light on my ongoing efforts to understand what distinguishes successful learning from episodes in which success is only apparent.

The observational data that inform the core messages of this book were obtained in the course of my clinical pursuits. This book is written from the totality of my experience in education, including my own observations of students whom I have worked with, reports of other educators, and conversations with parents and students about learning and school. Nonetheless, I would not have been able to make the observations I made, nor would I have understood their significance, without my familiarity with neuropsychological research.

Neuropsychological concepts have both enabled the observations I have made and influenced the form they've taken in my mind. In turn, my understanding of these concepts has been continually shaped and informed – reorganized, in the terminology of this book – by working with students week after week and year after year.

As I developed these ideas, I have often experienced a sense of discovery, of finding new connections and approaches. Over and again, these ideas have helped me to better understand learning situations and more effectively be of help. In my clinical work, they have helped resolve puzzles that otherwise appeared to resist solution. I found that I was developing practices that could help students with uncommon learning difficulties, while at the same time creating a framework of fundamental concepts that is relevant to all students, whenever learning is taking place. However, looking now from the vantage point to which these insights have brought me, I can say in the most positive sense – in the sense that what is fundamental tends to abide – that what I'm presenting hardly seems new. The core message seems to me like a renewal of truths that have been known about learning for a very long time, but that have too often been in eclipse.

As I continued to develop my understanding of these issues, professionals, as well as parents, have indicated it would be of value to have these ideas written down. It is with this request in mind, and in the spirit of offering something helpful, that I have written this book.

Oakland, CA Charles A. Ahern