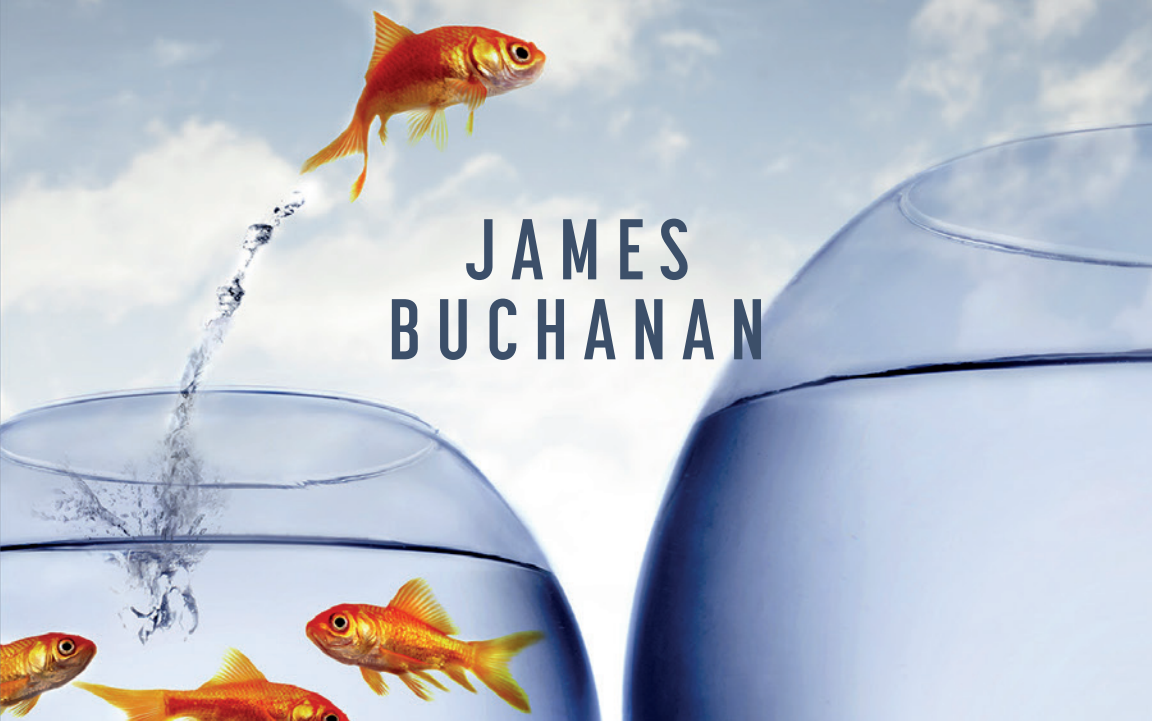


STUDY SMARTER

{ STONE-AGE ROOTS, MODERN WISDOMS
AND THE JOURNEY TO
EXAM SUCCESS }

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BUCHANAN



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and the Journey to Exam Success*

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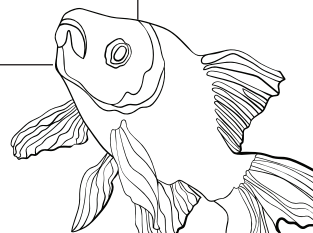
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PREFACE

This book is about how to study for maximum effect. You would be forgiven for thinking this is just another book on studying and then expect a rehash of what is already well-understood. But that is not this book. In the pages that follow, I hope to show you that the way we are currently treating learning and studying, especially at school, is falling way short of how studying should really be done.

I have spent decades teaching high school students, mostly Biology, a subject that demands high skill and content knowledge from students. I developed an enduring interest in how students managed to achieve their best in their tests and exams. This motivated me to read a lot of published material about learning and studying. Reflecting on it in light of my students' studying experiences, and especially the recurring stories of frustration, I was concerned about the conventional wisdoms related to studying, none of which are in short supply. I realised that much of what we know and hold on to is mismatched to the realities many students face.

I am not going to tell you that what I present in this book is the one and only true approach on how to learn and study effectively. Rather, the ideas contained herein are stimulated by me having analysed the concepts, practices and research of others, some of them giants in their field. All these ideas and the research that went into them is inevitably far more complex than what I can convey in one single book. Instead, my intention is to convey these concepts and approaches in a *new* light and with updated insights. I hope that you will find them helpful and that this book will inspire you to do your own further research and

reading. If it helps you do that, or it gets others to study better, then my task has been worthwhile.

I have tried as far as possible to acknowledge the sources that shaped my thinking, especially the main influencers. The references to popular works and books can be found in the text or in footnotes. Assertions that you might want to fact-check or follow up on usually come from journals. These references can be found in the section I've called Scholarly References. As my interest in this topic began long before the idea of writing a book emerged, I regret having lost track of some of the original readings, despite my best efforts to list them all. If you read something that looks familiar and I haven't acknowledged it, that's the reason why.

In order to pursue a rich understanding of a topic (superficiality is a problem of conventional wisdom), be prepared to explore topics in more depth than you'd expect, and to almost always face a 'So what?' approach to thoughts. This helps to avoid accepting things too glibly or missing potential insights. I hope that further research by others will confirm some of my own thinking; in the meantime, I will leave it up to you to decide.

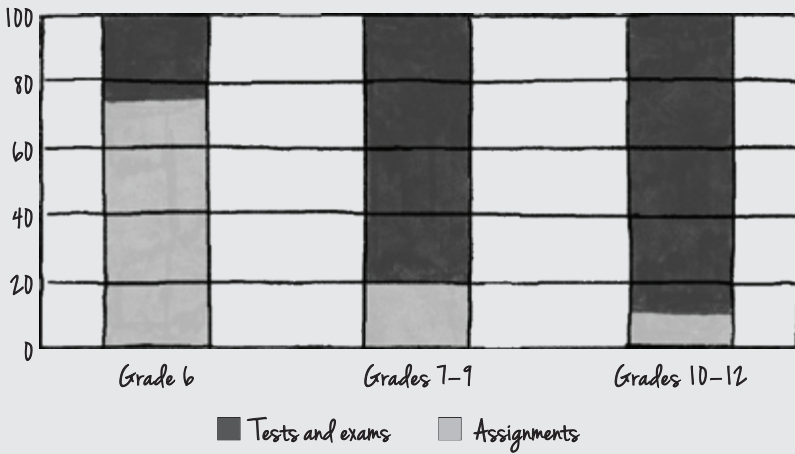
While it is my strong desire to align with reputable thinking, I'm not a scholar in the field and I don't profess to be one. I can only share with confidence how many students and teachers have found the insights that you are about to read to be a game-changer on a topic they were rather sceptical of hearing anything new about. It has changed their thinking and approach; I hope it will do the same for you.

The greatest need for this book is among school-going students, but I am under no illusion that this target is difficult to reach directly. Would teens read a self-help book about studying? That means that this book is written for those who are responsible for guiding others how to study – teachers, parents and other influencers. Hopefully, you are a parent in a position to shape your child's study methods. Better still, maybe you are a teacher with a far bigger reach and a heart for helping your many learners or students, and that this book resonates with you. But, if you are a mature student and you have access to this book, I have no doubt that it will be very useful for you too.

In the South African CAPS curriculum pre the COVID-19 pandemic, roughly 25% of marks in Grade 6 were allocated to the results from tests and exams. In Grades 7 to 9, upwards of 80% of marks each year came from tests and exams*. In Grades 10 to 12, the figure increased closer to 90%**.

If studying is so important for achieving success in tests and exams, then it's clear that being able to study effectively is critical.

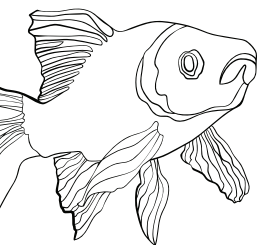
The contribution of tests and exams to final marks



*In Grades 7 to 9, year-end exams for each subject usually count 60% of the final mark. The remaining 40% are the result of a 'year mark', of which upwards of 50% stem from tests and exams written by students and learners during the year, a contribution of at least another 20% towards the final mark.

**In Grades 10 to 12, year-end exams for each subject usually count towards 75% of the final mark. The remaining 25% stem from a 'year mark', of which upwards of 50% stem from tests and exams written during the year, a contribution of at least another 12.5% towards the final mark.







INTRODUCTION

Poor study methods, as the main preparation for tests and exams, potentially have an enormous impact on students' test results (I'm going to refer to all summative assessments – tests and exams – as 'tests'). They also have an impact on the educational institutions where tests and exams remain the central forms of assessment, especially where accurate recall of prior learning plays a big part.

You might think that studying as a topic has been exhaustively addressed in the media and in schools, and that it is well-understood, with nothing new to be added. Therefore, the assumption would also be that successful studying is just a case of following any of the widely available advice or quick-fix tips out there. But while there is indeed a lot of information and conventional wisdom available for those seeking study assistance, I hope to shake some of the beliefs around 'all being well in the land of studying'.

Many of our popular notions of studying arose in contexts very different from where we are today, and where they have remained unchallenged despite changing contexts and discoveries in various fields of the mind. Much is made of the so-called 21st century skills; yet, the act (art?) of studying continues to side-step the critical thinking approach that 21st century skills call for as a way to clear and insightful thinking. This book recognises this shortcoming. Thus, we are not going to approach things as a list of study tips and things to do, which could be referred to as the *What* of study skills. Instead, we'll approach learning and studying with specific attention to the arguably more important questions of *How* to study and *Why* things work or don't work. Everybody knows how irritating a young child's ongoing 'Why?'

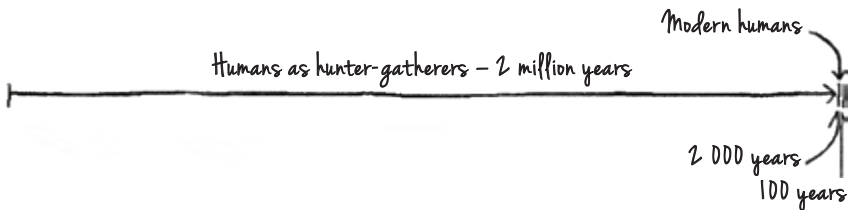
can be, but asking the question ‘Why?’ is undeniably the key to making sense of things, and hence the popularity of the *5 Whys Problem-Solving* technique¹. It is the answers to these how and why questions that will provide students with the real power over learning and studying. It will give them the opportunity to move from being principally mindless ‘consumers’ of learning and study advice to deep, agile thinkers who can adjust their approach according to their particular needs and circumstances. Guy Claxton, a researcher in the thinking skills space, phrases this ability as being able to ‘Know what to do when you don’t know what to do’.

Researchers commonly refer to learning that leverages ownership of an individual’s motivation, behaviour and (meta)cognition as self-regulated learning. This thinking largely emerged from the work of the Canadian-American cognitive psychologist Albert Bandura in the 1990s. Incidentally, Bandura is widely regarded by many as one of the greatest of living psychologists. According to Bandura, self-regulated students take responsibility for their learning, their attainment of knowledge, and their development of mastery. They are capable of determining not only what they *want* to learn, but also what they *need* to learn, and how to go about meeting these needs. They have the ability to recognise gaps in their knowledge, can develop plans to narrow these gaps, and know how to execute on those plans. They know when and how to adjust to demands and circumstances. As none of these sound even vaguely typical of the way students generally approach studying, this book could be seen as aiming to create self-regulated learners from individuals currently flying blind or mindlessly relying on the direction of others.

I have intimated that this book promises novel thinking. I can say this because it has been developed from a wide range of disciplines, including the often referred to context in which our minds were shaped,

1 The technique is a simple process used to solve any problem by repeatedly asking the question ‘Why’ (five times being the rule of thumb), to get through secondary layers of causality to the root of a problem).

namely our roughly two million years spent as hunter-gatherers. It is easy to say two million, but less easy to get a sense of what that means. Let me illustrate: Counting to this number at once a second, it would take you just over 22 days to get to two million; the last two thousand years would take the last 35 minutes on day 23; and the last 100 years a mere 90 seconds! With biological adaptation (the genetic mechanism whereby organisms become suited to their environment) in organisms taking a very long time to happen, it is important to understand that the last 90 seconds have had negligible impact, if any, in shaping the human mind at an adaptive level compared to the previous 22 days. In other words, our distant ancestry has a profound influence on how we modern humans function.



This looking to the past to see how our minds were and are shaped is the domain of a fairly recent arm of psychology, namely evolutionary psychology. It is now quite common in many fields of modern research and popular thinking to encounter a reference to our ancient past as a way of attempting to make sense of our current selves (think the Paleo or Primal movements). Studying and learning ought to be no exception and here, too, our distant past offers real insights into why our minds function as they do, the strengths and weaknesses of the various tools in our mental toolbox and how they are aligned (or not) to modern demands. Understanding how our minds are shaped allows us to move from the often rather thoughtless and blunt approach to overcoming contemporary demands, to one that is informed, poignant and ultimately highly effective.

Book Summary

This book is divided into two parts. Part 1 *Mind Matters* is less about the mechanics of studying and, instead, about the psychology on which studying relies – the drives and motivations that influence our valence for learning and studying. It's about getting into the correct frame of mind to be ready for studying and for the impact of either success or failure.

We begin in Chapters 1 to 3 by setting the scene for why we need to talk about studying at all. Hopefully, this contextualises my opening statement that *most students study very ineffectively*. 'Very ineffectively' is an important concern because if students did mostly study well, then this book and others like it would not be required.

Studying intervention needs to begin long before one gets into mechanics, tips and tricks. Intervention is a journey that begins with mental preparation. We live in a quick-fix world, especially so with Generation Z who want everything to be easy, digital and instant. Mental preparation looks at the importance of effort and achievement and what they mean for the individual. This leads to scrutiny of a number of important topics – fulfilment, ownership, control and how these link to procrastination, habits and excuses.

Achievement means setting clear and specific goals. In Chapter 4 we introduce goals as destinations, as *what* we want to achieve. But we then go on to look at Action Plans (APs) as being arguably more important for *how* we reach our goals. We unpack what it means for goals, and even more so APs, to be SMART. But we take this further to propose an even SMARTA approach.

In Chapter 5 studying is introduced as the last preparation activity on the journey from being taught, through learning, and then writing a test. But just because it is the last step before testing, this is not to say that studying is the only activity that matters. Learning – which I will regard as *understanding* – will be introduced as something that takes place in class, and the first step to making studying easier. We look at

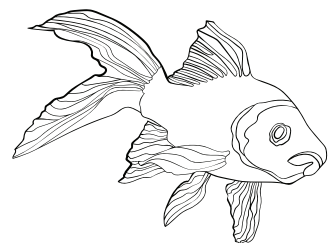
the role of attention and its opposite, distraction – the arch enemy of learning.

We continue on the topic of learning by diving deeply into the nature of learning and how the ancestral adaptations that helped us survive as hunter-gatherers apply to us today. I argue that these adaptations have a large role to play in how we go about things as modern humans. We return to effort, before moving to other concepts such as boredom, and the hardwiring that the struggle for survival has left us with. I propose we need to consider three attributes that we all share: natural curiosity, a universal inclination to think in pictures, and the power of association in making memory logical and recall possible. We consider the central roles of significance, interest and repetition for what makes it into our minds in the first place.

In 1995, the Swedish pop group Roxette released a greatest hits album *Don't bore us – get to the chorus!* Part 2 *Getting Down to Business* marks the start of the 'chorus' equivalent of the book and the beginning of what most quick-fixers were likely hoping to get straight to: the 'study skill' part of this book. In many ways, it is the more practical side of the book as well, and it begins by looking at some popular study skills and what we should make of them in light of what we have learned. In Chapter 7, we move to *how* we should learn, a case being made for using transformative tools. Tools are all very well, but we need a strategy, and here I propose a new strategy called *Trigger Maps*. Again, this takes our newfound insights into account. One you have a Trigger Map, we look at what research tells us about using them for memory retrieval and interleaving.

To avoid 'cramming', but also for all sorts of other good reasons, studying needs to be planned. This is Chapter 8. Study calendars (aka timetables) help us to achieve this, but they are another thing that teachers are good at telling students to do, without addressing the real issues students face in setting them up. We know that many students dislike study calendars. We look at why this is so, and how we can make calendars that are more meaningful as yet another way of being 'in charge' and taking control.

We wrap up the book in Chapters 9 and 10 by looking at the issue of practice, and finally some FAQs. And hopefully, by this point, you will be enlightened, inspired and equipped!



PART 1

MIND MATTERS



1

WHAT'S THE PROBLEM?

Over many years of helping students with their studying processes, and chatting to adults about their children's studying habits and their own memories of studying, I can say with equal conviction and dismay that people are generally pretty 'bad' at studying. Some may take offence to my repeating this statement so bluntly, but I need to drive it home because if it is true, then studying 'smarter' represents a no-brainer to making an enormous difference to students pretty much everywhere.

Beginnings

As a new teacher in the 1990s, it quickly became evident to me that students in the high school where I was teaching were tasked with an awful lot of things as part of the academic day. It was routine, for example, for students to be tasked with making models, writing essays, constructing posters, researching information, drawing diagrams, interpreting graphs, analysing sources, presenting orals, critiquing sources, making summaries, to mention only some of the activities or projects they were given. It was also assumed that they knew how to do these things. Teachers would 'mark' such tasks, with the feedback mostly being just that – a mark. But while the mark certainly quantified the outcome, it gave absolutely no clue as to where the task's strengths and weaknesses lay, nor how the student ought to go about doing better next time around: A mark of 65% meant it could be 35% better ... but how was the student going to achieve the extra 35%? Rubrics arrived quite suddenly and gave rise to a supposedly criterion-based way of marking.

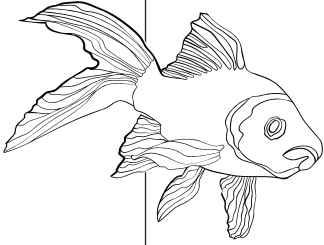
About the author

James Buchanan is currently the principal of Oakley House High, a private special needs school in South Africa. He qualified as a biology teacher with a BSc (Hons) HDE in the late 1980s, and taught in a number of Cape Town high schools over the next 30-odd years. He also served as a national examiner for the Independent Examination Board (IEB).

James had what he refers to as his 5-year ‘sabbatical’ in the corporate IT world on the back of his partially completed information systems degree, during which time he earned an MEd in self-regulation and study skills in 2015.

James has an open, critical mind and a sceptical, questioning approach to common sense and accepted knowledge. At heart, he is a teacher who wants to make a difference. This saw him writing his student guide *A Skills Standard for Budding Scientists*, and now this book, a work of passion that began as an idea some 30 years ago. A separate *Study Smarter Student Workbook* accompanies this book and is currently being used, with much success. James has an enduring conviction that studying should and *can* be better. He also believes that teachers and parents are best placed to teach learners and students to achieve this.

James lives in Cape Town and is married to an associate professor of occupational therapy, has two grown children, and two not-so-grown dogs.



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