Chapter 1 **What kind of learner are you?**

OVERVIEW

This chapter forms a foundation for the rest of this book. It will help you become aware of your learning preferences and the factors that tend to affect your learning. This awareness itself will be useful to you, both with respect to planning your learning and with respect to highlighting which chapters of the book you are likely to find particularly important. We have tried to give a brief overview of the most important factors and have tried to encourage you to make some judgements. You might want to revisit this chapter when you have finished the book to see if your impressions have changed.

Introduction

This chapter might be quite tough to work through. It asks you to take time away from reading to think about the things that affect your learning. The temptation will be just to read on; however, you will benefit considerably from having a few sheets of paper handy and trying to answer each question. Concentrate on each brief exercise and answer it as best you can, it will make the information sink in much better. At the end of the chapter, we have put a summary diagram, which we hope will highlight where you have assessed your strengths and weaknesses.

We will cover the following aspects of learning:

- cognitive aspects (how **deep** is your learning?)
- motivation (what **drives** you to learn?)
- self-regulation of study skills (are you **aware** of how you learn?)

How to Succeed at Medical School: An Essential Guide to Learning, Second Edition.
Dason Evans and Jo Brown.

- how do you know when you know enough?
- conception of learning (what you think learning is for?)
- learning in groups (love it or hate it)
- mood and learning (a help or a hindrance)
- VARK (your preferences in using your senses in learning).

You may want to have a brief break after each section, as there is quite a bit to think about.

Aspects of learning

You may have already completed learning style inventories or psychometric tests to try and define what sort of learner you are. There are all sorts of different learning styles and each tends to look at slightly different aspects of learning. The authors of the learning styles inventories claim that greatness can be reached by understanding how you think and learn, using their learning style inventory of course. Our aim is more modest – we hope that by thinking about how you learn, you will become aware of what aspects of learning you will find easier and where the challenges might lie ahead for you.

> *Filling in a learning style questionnaire was fantastic, it helped me realise the kind of learner I am and build on my natural style.*
>
> Jo, first-year graduate entry student.

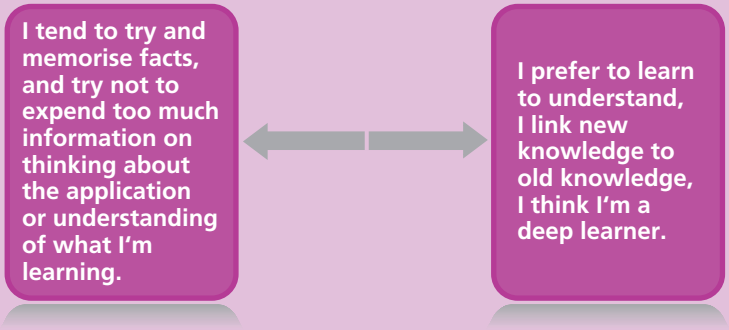
Cognitive aspects

This refers to the way that you go about building new information into memories – how much do you skim over the surface or how much do you struggle to really understand? How well can you remember something that you have learned? For how long?

EXERCISE

Think about a topic that you learnt really well. How 'deep' was your learning? How much did you think about how your new learning linked in to what you knew already? Did you learn to understand or did you learn to memorise? Which do you find easier?

Make a judgement call, on the line below. Where would you put yourself?



If you have a preference for memorisation (the left-hand end of the line), then you will do very well with some things – drug names, anatomy, tests that ask you to regurgitate facts – but you are likely to struggle more on those tasks that require a deep understanding or application of the facts; unfortunately, a good amount of research indicates that students scoring towards the right tend to do better at medical school. You might think about some strategies to encourage you to shift more to the right, and in Chapter 2 (*Learning Knowledge*), we will go through some of these. If you tend to memorise as many facts as possible shortly before exams, forgetting them shortly after and have an easy time the rest of the year, then you will run into trouble with the volume of work in medicine and will need to start working regularly; this might be a challenge for you.

We give more tips on encouraging deep learning in Chapter 2, and advice on timetabling and regular study in Chapter 8.

Motivation

What makes you learn? Do you learn for interest, or perhaps to pass exam or even to please others? Some medical students learn best because they are fascinated by the science of medicine, others learn best when they can see the practical application of their learning and a few learn best when someone is standing over them pressurising them.

EXERCISE

Spend a minute thinking about what motivates your learning. You might want to spend some time talking with your friends about this, be honest with yourself. As you come to a decision, think about how you might make use of this insight.

I am most motivated to learn by:

- If you find the **science fascinating**, spend a couple of hours each week in the library looking at the journals – *Nature*, The *Lancet*. When learning about diabetes, you will want to read about insulin receptors, about the pathology, about the underlying mechanisms by which diabetes causes increased cardiovascular risk, in addition to the core areas that you *need* to learn. The commonest pitfall if you are this kind of learner is that you might have some trouble with knowing when to stop reading and when enough is enough – you cannot have a PhD level of knowledge on everything in medicine; we discuss tactics to manage this in Chapter 2.
- If it is patients and the **practical application of knowledge** that does it for you, you might find some of the bookwork in medicine rather dull and difficult to digest. Spend time thinking about practical applications. If you are learning about dry biochemical pathways, read also about clinical presentations of patients with problems in those pathways. You can look for case studies or even patient videos online that are relevant to your learning. You will want to buy some clinical textbooks early, so that you can read around clinical features of diseases. When learning about the pathology of the cervix, have a read about cervical smears, about the diagnosis and treatment of cervical cancer, think about how what you are learning will affect the care you give to patients. You might ask a friendly gynaecologist if you can sit in on their colposcopy clinic. See as many patients as possible and read about the conditions that you have seen – you will remember information much more clearly if you can link it in your memory to a patient you have seen.
- Many students are most highly **motivated by exams**. If this is you, then look up the exam structure early in the year – look at the objectives, plan how you will cover them. Use past questions to structure your learning and to test yourself, write your own, learn in a group and write tests for each other. The revision section of this book will appeal to you (Chapter 9) and also some of the study strategies in Chapter 2.

- Does **'knowing that you've done a good job'** motivate you to learn more? For many of us, praise and reward are important. If it is a major driver for you, you might want to be pragmatic in some of your learning. If you are sitting in an asthma clinic next Thursday, then learn about the management of asthma before then. You will feel like you understand what is going on, you will ask sensible questions and the clinician in clinic is likely to be impressed – this will motivate you to study more. This simple technique works exceptionally well!
- There are a few students who thrive on **external pressure**. They love teachers who intimidate students, whereas most of their peers tend to hide in threatening environments, they thrive in them. If this is you, then you might want to try and create situations that will drive you to learn. Agree deadlines with tutors or your peers, agree to teach students in your year or the year below; encourage them to try and catch you out, so that you know that you will have to learn your topic well.

Of course, you will not fit singly into any one of these five vignettes, but you will know which ones apply most to you. You are also likely to find that different topics might have different motivations for you. Clearly, there will not be a single strategy that applies to you. You cannot only read about the conditions that you have seen patients with or you will never learn about the rare ones. Similarly, if you are 100% examination focused, you might miss out on the things that are important but not examined. However, knowing and manipulating what motivates you in order to maximise your study is a key skill. It might even be worth pinning a note up on the wall above your desk, reminding you of what motivates you.

Self-regulation of study skills

Students who are aware of how they are learning (this is called metacognition) tend to perform much better than those who do not. This book is largely about helping you develop effective study skills and an awareness of when and how to use which ones. How aware of your learning are you? How consciously do you make choices in how you learn? Did you use different methods to learn different topics at school? If not, why not? The more you can learn to think about *how* you are learning, the more you will develop as an effective learner.

EXERCISE

Think about the following tasks. Spend 2 minutes on each task thinking about how you would go about it. Time yourself; it will be time well spent.

- You have a list of complications of diabetes to learn.
- You have to memorise a list of drug names for treating high blood pressure; the names all sound rather foreign to you.
- You have to learn the surface markings of the various lobes of the lungs so that you know which one is where when you are examining a patient.
- You have to learn how to take blood.

How easy was it to plan how you would go about each task? Was your plan for each task different or the same? Did you have several options for each task or just one? The more options and the more active your decisions, the easier you will find learning. If you tended to think of just one method of learning ('I would just keep repeating it until I remembered' or 'I would just learn it'), then you are likely to benefit from spending extra time on Chapter 2 and it might be worthwhile finding out if there are some study skills workshops run by your university. Improving in your study skills is an investment that will really pay off.

> *Learning how to learn was the most important thing I got from medical school, unfortunately I didn't realise this until the second year!*
>
> Rebecca, finalist.

How do you know that you know enough?

The A-level syllabus that you studied was well defined, in terms of both breadth of topics and depth that you need to go to in each topic. This is not so true at medical school and, as we have already mentioned, knowing when to stop can be a challenge. Some students are excellent at monitoring their progress and use the sort of tricks that we discuss in the chapter on learning knowledge (Chapter 2), but others either tend to learn far too much (and run out of time) or learn far too little.

EXERCISE

Think for a minute how you know when you have learnt enough on a topic. What evidence do you use that you know something?

This evidence that you rely on to know that you know enough on a topic may be objective, subjective or 'non-evidence'. **Objective measures** might include testing yourself from a book of past questions, or writing questions before you start learning from the course objectives and seeing if you can answer them when you think that you have finished learning; perhaps you try and explain it to someone else and see if you can answer all their questions. More **subjective evidence** will include others telling you that you are knowledgeable or perhaps you make a judgement that you can now understand something that previously you found rather complex, perhaps you look at the learning objectives and make a judgement on whether you have covered them. **Non-evidence** tends to be pretty useless, it includes judgements such as judging the number of hours that you have looked at a page, or how many books you have on the subject or how tidy your notes look as some 'guesstimate' of how much you have learnt.

You are likely to use a blend of these three approaches, and students who tend to cross-reference objective and subjective measures are likely to have a far more accurate idea of where they are up to in their learning. Students who use non-evidence tend to be rather surprised when they fail exams – 'but I spent hours looking at the books' or 'but my notes are always so perfect'.

Conception of learning

What is learning for? What is learning about? Do you see learning as a passive increase in knowledge or perhaps as memorisation of facts; perhaps you see learning as a way of gaining information that you can apply in practice or perhaps you learn in order to try and make sense of the world around you. Students who tend to try and make personal meaning out of what they learn seem to be more motivated and achieve deeper learning.

You might have left secondary school thinking that learning was about getting facts into your head. If so, you should be aware of the transition in higher education, where you will be expected to question, debate and weigh up different, conflicting evidence in order to try and make some sort of sense of the information in front of you and how it relates to the world around you. You can speed that transition by questioning yourself: asking 'What if … ?' or 'Why … ?' and 'What use is this information?'.

As an example, when you are learning about diabetes, you might ask yourself 'what if diabetes was not a disease that either you had or you did not have, but a continuum between normal blood sugar and damagingly high blood sugar?' Perhaps you will ask 'why is the threshold for diagnosing diabetes a fasting sugar of 7.0 mmol/L and not 7.4 mmol/L?' If you have a very concrete idea of facts, valid questions like these might be uncomfortable. It is better to have this discomfort and learn to manage it early on, rather than later in your career. You might have to trust us on this one!

Learning in groups

Collaborative learning has its pros and cons. Some students feel that they can only really learn through discussion and debate with others and they tend to struggle to find people with whom you can discuss everything that you have learnt. If this is you, you will benefit from reading the chapters on study skills (Chapter 2) and revision (Chapter 9). In contrast, some students find that they hate to study with others. These students tend to struggle to know whether they are learning to the right depth and they really struggle with clinical and communication skills learning, as feedback from peers and peer practice is crucial. If you fit into this group, the chapters on clinical and communication skills learning (Chapters 3 and 4) and working in a group (Chapter 5) will be particularly relevant to you.

Mood

Mood affects learning. Have you ever been so angry or frustrated that you were unable to study? Or so passionate about a subject that everything you read seemed to make sense? 'Feeling' can be intimately involved with 'thinking'?

EXERCISE

Mark on the line where you imagine you lie between the two extremes.

Are there things that particularly swing you one way or another along this line? Some people find certain triggers throw them into emotional responses; guilt, for example, drives some to study but handicaps others. How about anxiety? Do you spend too much time worrying about the things you have not done rather than getting on and doing them?

What if you are on the other end of the scale, emotion never affects your thinking and learning, would you be missing out on the passion, the buzz of knowing that you are 'on a roll'? How will you develop empathy if you cannot see how emotion affects people's decisions (logically, surely everyone should agree to take part in medical research)? What about teamwork skills – how will you relate to others if you cannot see the emotional contexts in which they exist?

Think about where you are on the line and consider at what point on that line you might be more productive. Spend some time considering how you

can actively manage the triggers and swings to be a little more productive a little more of the time. We have worked with many students and the simplest strategies are usually the best – a young woman whose studying used to be distracted by regular family crises moved out of home. When phone calls replaced knocks on her bedroom door, she discovered that she could switch off her phone while she was studying and she could study with a clear head.

Sometimes emotion clouds *all* your thoughts, and that is a time to get help. Indeed, everyone will struggle with the way that they are feeling and the way that affects their work at one time or another in their careers. In Chapter 8, we talk about avenues to ensure that you gain support when you need it.

VARK: using your senses

Think about incense. What comes immediately to mind? For some people they will see something relating to incense – perhaps the smoke curling up from a burning pot. Others will hear something – perhaps the ringing noise that an incense burner in church makes when it is swung or the word incense being said. Others might see the word as it is written, perhaps think about the different meanings of the word: 'pieces of fragrant substance' or 'to infuriate'. Finally, you might think about the movements that you would make to light or to swing the incense around.

It seems that some people have a **v**isual preference, others an auditory or **a**ural preference. Some prefer to **r**ead or write things to learn them and others have a strong **k**inaesthetic preference – that is physically to do things. The VARK learning style has come up for criticism, but it has some uses. Look at the following descriptions and think of how much they each apply to you.

Visual people will like to use colour and shapes, and they draw flow charts and like to have everything in sight in front of them. They like books that are visually appealing, with small blocks of text, plenty of tables and diagrams. They might find learning visual topics like anatomy much easier than memorising lists of words.

Aural people like to listen, they think that lectures are better than books and like it when someone explains things to them in words or they explain to others. They remember the anecdotes from the lecture, or what that patient said and sometimes they forget to write things down as they are too busy listening. They are not fond of books and tend to read books by forming the words in their heads. Sometimes their lips move when they are reading.

Those with a **read/write preference** tend to like books and texts and lists. They might copy out chunks of text from the book to form their notes, which are often quite lengthy and quite dry. They are good at spelling and can

remember lists of words. They might look at a foreign word and work out what it means from similar words that they know.

Kinaesthetic learners like to learn by doing. They like practical applications – 'this goes there'. Real-life examples are great and learning by trial and error really consolidates their learning. Abstract things are more difficult for them and they strive to think of applications for what they are learning.

EXERCISE

For each of these preferences, rate whether you think that you are strong (you often think and learn in this way), average (you sometimes think and learn in this way) or weak (you rarely think or learn in this way)

	Weak	Average	Strong
Visual learning			
Aural/auditory learning			
Read/write learning			
Kinaesthetic learning			

Most people have a preference: some have strong preferences, others have a more even spread.

Think about your preferences, your strengths. This will give some indication of the sorts of tasks and subjects that you will find easiest. Think about how you can capitalise on your strengths:

- If you are a visual person, are you making best use of colour and pictures? Would you be better making your notes on a pad of A3 rather than A4 so that you can see more in one glance? Do you take one of those 4- or 10-colour pens into lectures with you? If not, why not? Do you try and convert difficult concepts into flow charts or cartoons? You will like the section on concept mapping in Chapter 2.
- If you are an auditory person, then do you make the best use of lectures, sitting near the front, away from distractions? Have you tried using tapes or reading your notes out loud? Do you ever put difficult facts to music to help you remember? You will find teaching and explaining to others really useful. How about starting a study group or a debating society?

- If you like the written word, you can write brief descriptions of diagrams or flow charts. You can change the words that your notes are written in, choosing your own words, so that you are sure that you are processing the information. You can write down patient stories, make lists and write essays. You might well like studying in libraries. Perhaps you could start an online group with others from your medical school or other medical schools where you explain things to each other on a message board or wiki.
- If you have a kinaesthetic approach, you will want to find practical applications for what you are learning. Get out there and do things – if you have seen a patient with a diabetic foot ulcer you will find it much easier to read about it. Apply what you have learned whenever you can, search for relevance. Use your imagination and imagine things happening when you read about them.

Think also about your weaknesses and how you can address them. There are two main approaches here. First you can try and redesign the task to play to your preferences. If you have to memorise a list of drug names and you are terrible at 'read/write' but strong on auditory memory, make up a song or a poem and sing it out loud. If you have a preference for visual things, turn the words into pictures: the drug zopiclone might become a number of identical (clones) Z-shaped floppy aliens (zoppy), all sleepy in bed (zopiclone is a sleeping pill).

The second way that you might address your weaknesses is to train yourself to be stronger in these areas. Timetable extra time for the tasks that you might find challenging, and ask your peers what tricks they use. You can find others with similar preferences to you (the incense exercise is a good one, although lots of people say 'the smell', which does not fit well into VARK, but is discussed more in Chapter 9) and find out how they learn. If, as a group, you all hate learning vocabulary then at least you can empathise when you are testing each other on drug names – you will most likely learn at a similar rate.

You can find out more about VARK at www.vark-learn.com or by typing VARK into your favourite Internet search engine. There is not a huge amount of evidence for VARK over any of the other dimensions of learning listed above but, like the others, it is useful to help you think about where your strengths and weaknesses lie, how you can capitalise on your strengths and actively manage your weaknesses.

Learning styles

As we mentioned at the start of this chapter, different learning style inventories tend to measure different combinations of the aspects of learning

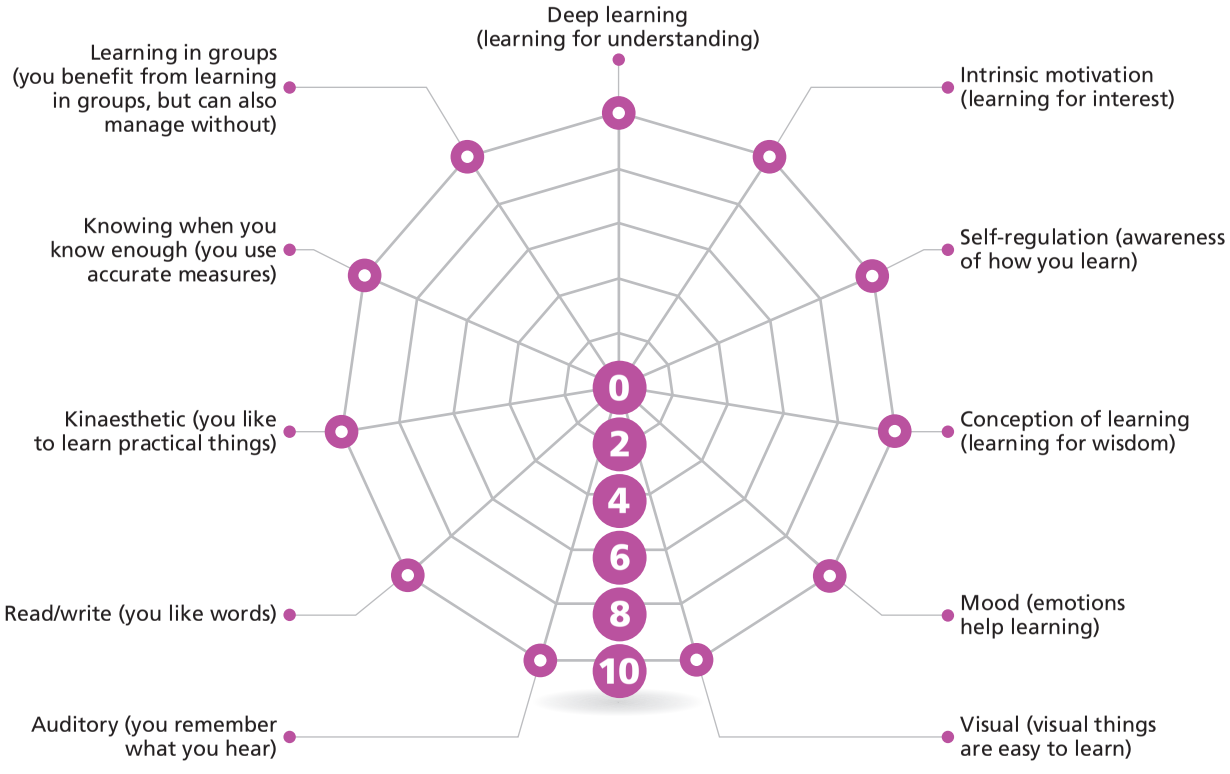


Figure 1.1 Summary.

that we have listed. If your medical school has a progressive curriculum, you might well fill out a questionnaire on your learning style and even get some numbers or a graph that will summarise your preferences. We would recommend that you look through this chapter a couple of times and actually do the exercises and answer the questions. Write some notes on where you identify your strengths and weaknesses, triggers that upset your learning and tips that maximise your learning.

Summary

This chapter has asked you to make multiple judgements about factors that affect your learning, which is not something you might have done before. Your judgements might not have been terribly accurate and we would recommend that you revisit this chapter again when you have read the remainder of the book and had a chance to think in more depth about what factors affect your learning.

The multiple aspects within this chapter have made it rather complex. You might find Figure 1.1 useful in summarising the chapter – you can mark on each axis where you think your strengths are (perhaps you decide 10 relates to "strength" or "no problem").

References and further reading

Coffield, F. (2004a). *Learning Styles and Pedagogy in Post-16 Learning: A Systematic and Critical Review*. London, Learning and Skills Research Centre.

Coffield, F. (2004b). *Should We be Using Learning Styles?: What Research has to Say to Practice*. London, Learning and Skills Research Centre.

Questions and answers

Q: I have done an online test for VARK and my kinaesthetic score is low – will I have trouble learning clinical skills?

A: The predictive validity of these different tests is not great. Some studies have suggested that students with either deep (learn to remember and understand) or pragmatic (learn to pass exams effectively) learning styles do better in medical school exams than those with superficial styles (cram facts for the exams, skim over the top), but this really is not rocket science to understand. The usefulness in these inventories is that they encourage you to think about your preferences and the way that you tend to learn – do you think that this judgement is true for you? If you tend to avoid practising when learning a skill, how are you going to make sure that you practise your clinical skills a great

deal when you are learning them? See Chapter 3 for an in-depth description of effective clinical skills learning.

Q: My medical school not only makes me do learning style inventories, but also inventories on how I work in a team – it drives me mad!

A: There are inventories for almost everything you can imagine, as a significant proportion of the world is made up of people who like to measure things, everything; in fact they even make up new things in order to measure them. As you might guess from this chapter, our emphasis is less on formal, accurate, statistically significant measurement, but much more on using these tools pragmatically in order to develop your self-awareness. We know that students who develop self-awareness with respect to learning outperform their peers, so see what you can take out from the exercises. Perhaps you want to find Professor Coffield's papers (Which critiques, and criticises, learning styles inventories in depth) and engage in a discussion with your course convenor.