

The Art of Learning and Teaching Human Anatomy and Physiology

By Earle Abrahamson and Jane Langston

Anatomy and physiology can inspire teachers and students to encourage discovery and exploration of what lies beneath the external facade of the human form. But for those who have yet to master the art of learning, anatomy can instil uncertainty and doubt, as they struggle to digest and apply principles of knowledge within, and beyond, the subject matter.

Which has been your experience with anatomy and physiology? Did you learn it to achieve a certain level of learning, to proudly display your certificate, whilst breathing a sigh of relief that you will never read another anatomy book again? Or did you learn anatomy and physiology to give you the fundamental understanding of the human structure and function that has enabled you to explore other avenues of study, such as massage, reflexology or aromatherapy? Are you still familiar with the details that you learned, or is most of it buried in the darkest corners of your brain?

As authors of a new text on learning and teaching anatomy and physiology, we appreciate the journey that therapists and practitioners travel as they begin and continue their careers. We have travelled those routes too. Drawn together by a fascination of the human form and function, and a love of learning and teaching, we worked to discover what it is we have learned about teaching and learning anatomy and physiology whilst always striving for new

knowledge and skills. We travelled our route to create a book that taught the reader how to use knowledge to build and retain understanding, and to empower learning anatomy and physiology and make it fun and most importantly, memorable.

In this first article, we ask you to consider your anatomical learning. Is it up to date? Is it at the correct level of learning for your massage practice? How can you expand your knowledge? Over a series of articles, we will give you some study skills tools to help you gain the most from your anatomical studies.

Learn to Learn

Learning anatomy and physiology provides a platform for students and teachers to explore subject matter in multiple ways. The choice of technology for learning this art has evolved from reading text to tapping apps on mobile devices or even using virtual reality software. Technology has made learning anatomy and physiology more accessible to many but learning the subject



still presents problems, if fundamental learning skills are not in place.

There is a wonderful motivational YouTube video, wherein two individuals become stuck on an escalator, when it stops working. Do search for it. When viewing this video, the humour of the situation overrides any questions around logic and problem solving. The video continues to illustrate the frustration, inconvenience, and anger experienced by individuals in situations when uncertainty, or unknowing, prevail. The video ends with commentary explaining that in life some problems are easy to solve - simply get off the escalator. How easy is it to get off the escalator? If we move back we realise where we have been; into perhaps the comfortable space that doesn't challenge us. If we decide to move forward, we enter a world of the undiscovered, the new, the challenging; a potentially scary place if we are not equipped for the challenge. Both situations have potential for growth and development but it depends where we choose to be. How safe are we in our attempt to discover the new, to fail, to learn, to adapt, to develop? Do we choose to return to the world we know, to comfort ourselves in our knowing, but learning to fear what it is we need to learn? Anatomy and Physiology has the potential to be both these worlds and the ticket for the journey to successful studying is the anatomical toolkit, arming us with appropriate power tools for success; observation, reflection, activation, repetition and a keen sense of fun.

Observing Anatomical Subject Matter

Have you considered using art to embed your anatomical knowledge? In an introductory lecture on anatomy we encourage students to study and observe the human form through the eyes of others. We term this a 'photo voice' - a simple visual that depicts the human form painted, sketched, photographed or sculpted by the great artists to the young child. Each painting, or visual, tells a story about shape, texture, form, position, proportion, and life. Students are simply asked to consider each visual and then discuss how the artist constructed their image based on their anatomical knowledge. Answers range from intricate study of the human form through dissection of body parts right down to a child's drawing of a stick figure. What is evident is how each image

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explains the use and application of knowing what the human form is. The child, for example, over-emphasises shapes and has limited understanding of human mechanics depicted through straight lines for limbs, devoid of joints. For the child, interestingly, the image they see is often the image of a shadow of the human form. The great artist, in comparison, has mastered how to depict the human form through use of body alignment, texture and proportioning of structures in relation to other structures. The artist will have considered the details of the musculature, and the parameters that limit and shape our posture.

Next time you see an image of a human form, take time to consider the anatomy that lies beneath, and consider the knowledge of anatomy that the artist possessed. Is it anatomically correct? Are certain muscles causing limbs to be flexed or extended? Is the torso rotated? Give yourself points and prizes if you notice anatomical landmarks or positions, and congratulate yourself if you spot an anatomical error!

Reflecting on Anatomical Study

We recognise that we learn better if we are inspired to learn, and if we enjoy the subject matter. How do we inspire others to appreciate anatomical subject matter? How do we engage the learner with the learning content so that the focus is on enjoying the journey rather than using the journey to reach a final destination i.e. passing examinations?

To illustrate this idea, it is useful to consider a film or storybook you have seen or read more than once. Each time the film is seen or book read, we learn to discover new insight, to

see the previously unseen, to better appreciate the content. This enables us to view situations through different lenses. The studying of anatomy and physiology lend themselves to using new ways of seeing and doing, to revisit prior knowledge with a more 'grown-up' and mature anatomical knowledge. The first time the anatomy and physiology was taught and learned, it was all new knowledge. Concepts and processes were being embedded, and once mastered, these became the foundation stones for future building. Continuing professional development in terms of revisiting some anatomical concepts allows the subject to be viewed with more mature eyes, and with those very foundation stones in place. Often students remark that they are surprised that they didn't understand this concept the first time around, as it seems quite simple and basic now. This is because time and experience has allowed reflection.

Perhaps take some time to look through your old course notes and text books. Look at the topics that you enjoyed the least. Do they still hold the same fears and frustrations? Or, on reflection, do they seem less intimidating now? Choose a different text book to offer a new approach. Enrol on a refresher course in anatomy and physiology or take a course at a higher level to extend your learning.

Your career as a massage therapist or complementary practitioner inspires and motivates you, so use your 'day job' to promote and challenge your anatomical studies. Reflect on each client; take time to consider their symptoms, medical history and pathology. Consider which body systems are out of kilter, and what physiological change is needed to attain equilibrium. Reflect on your choice of massage technique; which muscles are below the skin you are massaging? Which arteries, veins and lymphatics are present in that limb? Which ligaments are supporting the joint that you are mobilising? Which type of joint is it? Thinking anatomically gives depth to your practice, thus building your knowledge and confidence.

Learning Anatomy by Activation

Anatomy and physiology is a practical study, one that demands a hands-on approach to locating, palpating, and examining structure in relation to function. Students often need helping in navigating this unfamiliar terrain. In our book we have provided some ideas around practical teaching methods that



could be used to introduce or revise concepts, terms, and applications.

Nicholson et al (2016) studied the effect of using experiential learning within the anatomy classroom. Four interactive workshops aimed at embedding the anatomy of the forearm were offered to students as revision. They could do body painting, puzzles, clay modelling of the bones and structures or quizzes. The study showed that learning in this way improved examination performance and self-confidence and promotes engaged enquiry and deep learning with integration of anatomy into the real-life clinical context. We recognise that workshops of this nature are a valuable addition to traditional anatomy learning and teaching in the health sciences, so utilise creative ways of teaching; palpatory anatomy courses, painting

ceramic models, clay modelling, puzzles, quizzes, role play games, team games and mnemonics. For visual and kinaesthetic learners, spending time exploring the details of the cranial and facial bones and painting a ceramic skull is an exercise in mindfulness, as well as giving them a model to take home to continue to study.

Repetition, over and over again

As we continue the Journey of anatomical learning and teaching, we learn to make sense of what it is we need to know. The journey is a process through discovery, it enables us to ask questions, to review understanding, and to test our understanding through application. By using our new-found

knowledge, over and over, we are able to really embed the understanding into our massage practice, and to hone and refine our anatomy skills.

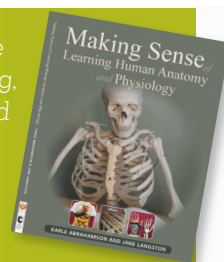
To quote the words of the philosopher Jiddu Krishnamurti:

“There is no end to education. It is not that you read a book, pass an examination, and finish education. The whole of life, from the moment you are born to the moment you die, is a process of learning.”

Our next article will further explore the creative methods that can be employed to help us remember anatomical detail. We will share some memorable quizzes, games and activities and explain their rationale and effects enabling learners and teachers to have fun with anatomy and physiology teaching and learning.



Earle Abrahamson is the Chair of the Massage Training Institution (MTI), elected member of the massage therapy PSB on the CNHC, Vice-chair of the GCMT, and director at Hands-on Training, a specialist massage training school in North London. Together with Jane Langston he authored “Making Sense of Learning Human Anatomy and Physiology”, Lotus Publishing”. He holds the role of senior lecturer in Sports Therapy at the University of East London. In 2012, Earle was the recipient of the ICNM outstanding contribution to complementary medicine, and was awarded an ICNM fellowship in 2013. He was part of the medical team for the London 2012 Olympic and Paralympic Games.



Jane Langston is a Fellow of the Institute of Biomedical Science, and originally worked in pathology departments in the National Health Service in England for over 20 years, which instilled in her a love of anatomy and physiology. She has been an Amatsu practitioner since 2000, and is now managing director of the multi award winning company, The Amatsu Training School. In 2012, this was awarded the ICNM Best Complementary Medicine Company, and in 2015, Jane was the recipient of the ICNM Most Outstanding Contribution to Complementary Medicine Award.

Further information on Anatomy and Physiology courses can be found here:

www.learnanatomy.uk

Further information on training courses can be found here:

www.hands-on-training.co.uk | www.massagetraining.co.uk | www.amatsutrainingschool.com

References:

Nicholson et al, *BMC Med Educ.* 2016; 16: 7