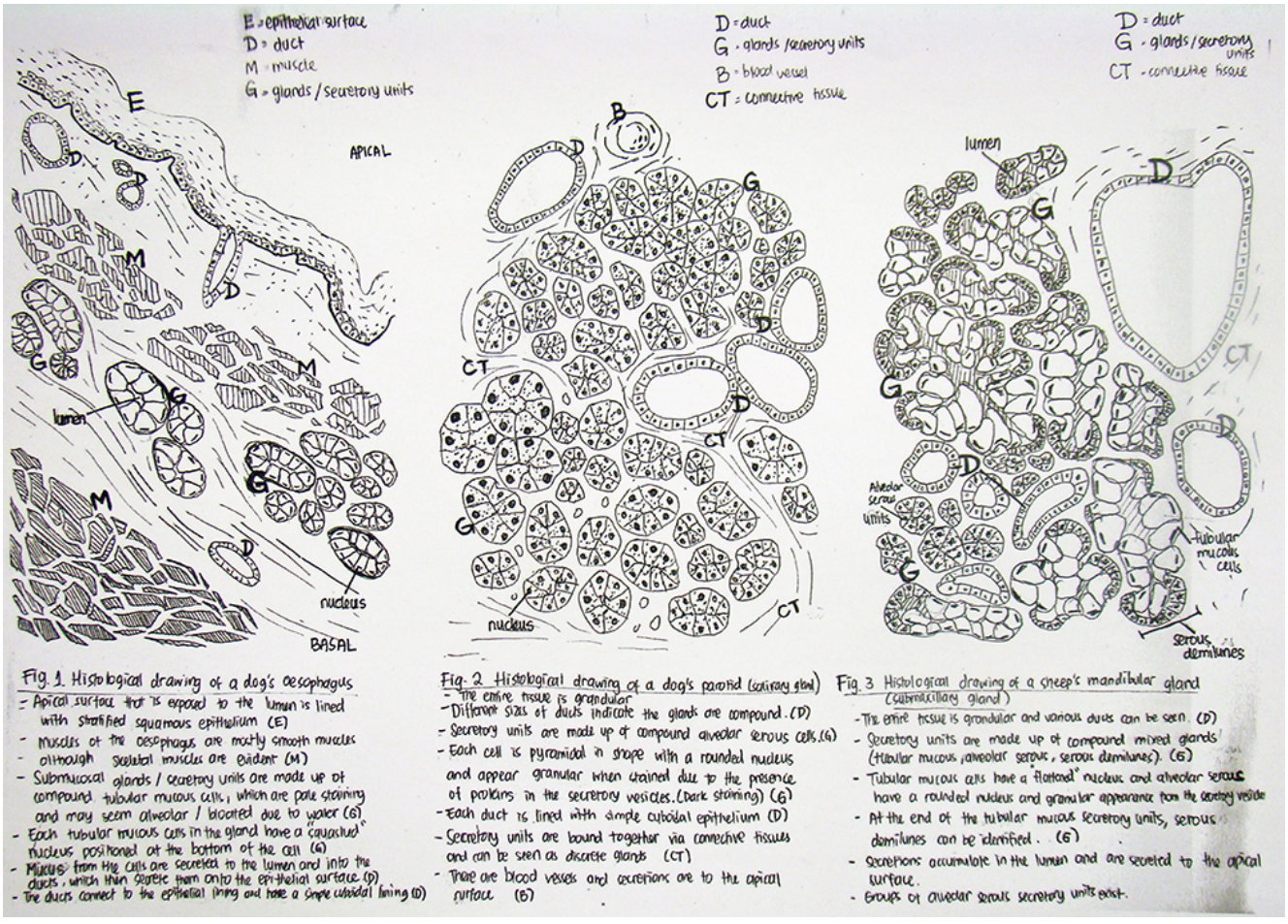
Using Drawing as a Way of Understanding: University of Liverpool Veterinary Science Schematic Drawing Task.

Many thanks to Fay Penrose, Lecturer in Veterinary Biology at The Veterinary School at University of Liverpool, who shares her work in introducing drawing as a way of checking understanding of complex subjects. This methodology would be very transferable to a number of subject areas in schools.



Histological drawing by Tashia Anindwita, © University of Liverpool

Introduction

Anatomy, the science that concerns the form of the tissues and organs of the body, is by its very nature a visual and tactile science. A good understanding of the normal shape and colour of things, their texture and how they relate to other structures in space (topographically) aids understanding of normal function and the ability to recognise abnormal, or pathological, processes. Medical, dental and veterinary undergraduate students spend a large part of their first two years at university learning anatomy to enable them to become good clinicians.

However, anatomy is not easy to learn. There is so much of it and everything has a name. Or several different names. Even things that don't exist, potential spaces, have names. Every organ or structure has specific parameters of normal shape and colour, which students become familiar with by looking and touching specimens during practical classes. Away from these classes students need to find a way to summarise their understanding in order to clarify, revise and explain functional anatomical concepts.

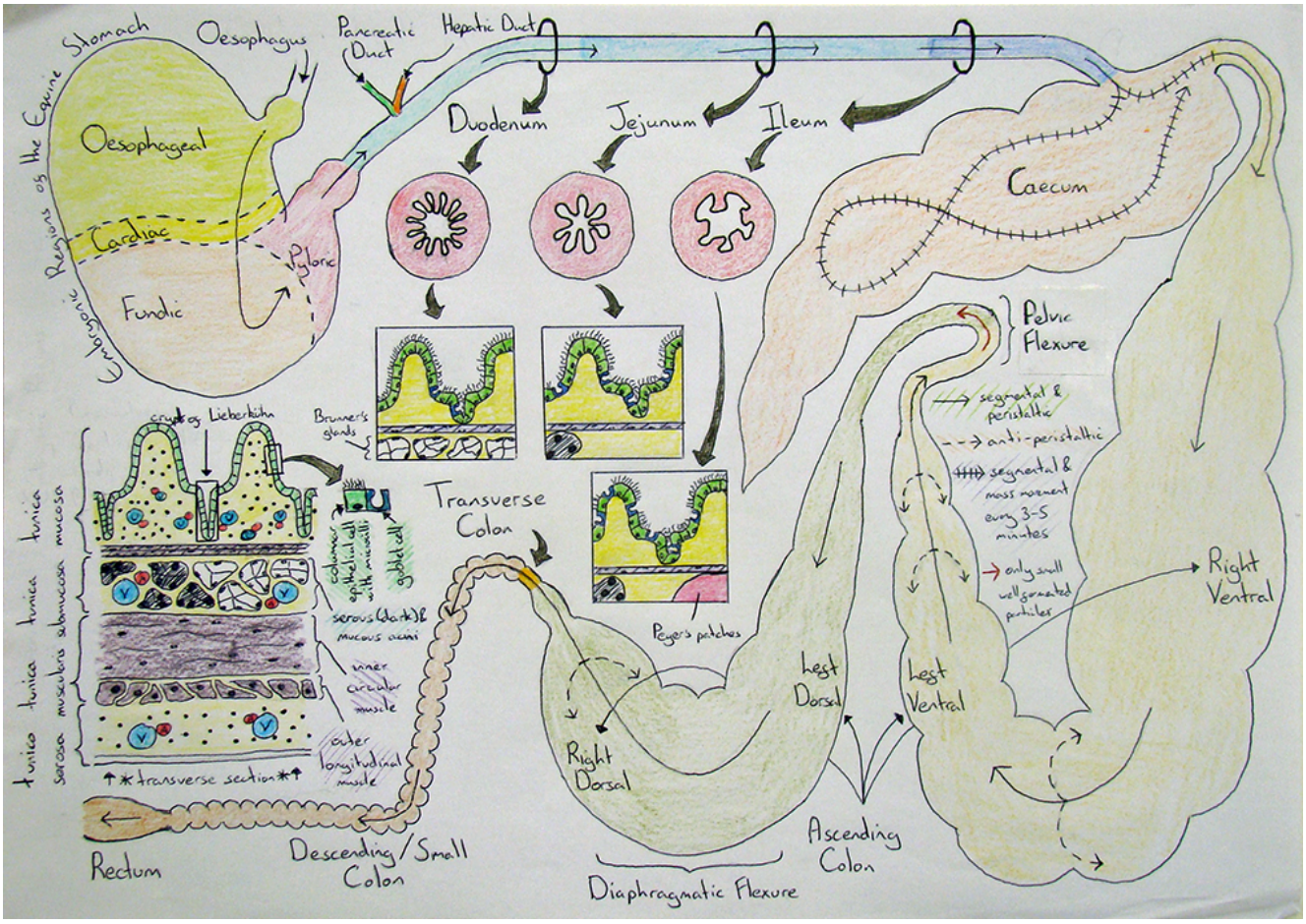
Aims

Traditionally many students learn or revise by creating written notes which are time consuming to produce and often unclear or contain contradictory or vague statements. Revisiting them for the purposes of revision is also time consuming and requires the reader to 'translate' the written word into a mental visual image. Acknowledged as a problem by veterinary staff and students alike is the sheer volume of material that has to be learnt. In the context of clinical anatomy, merely memorizing the names or shapes of things is not enough, an understanding of their functional importance is vital to become a problem solving practitioner. This short series of tasks asked students to draw instead of write. We asked them to use observational and conceptual skills to represent an example each of microanatomy, skeletal anatomy and to summarise their understanding of an anatomical system.

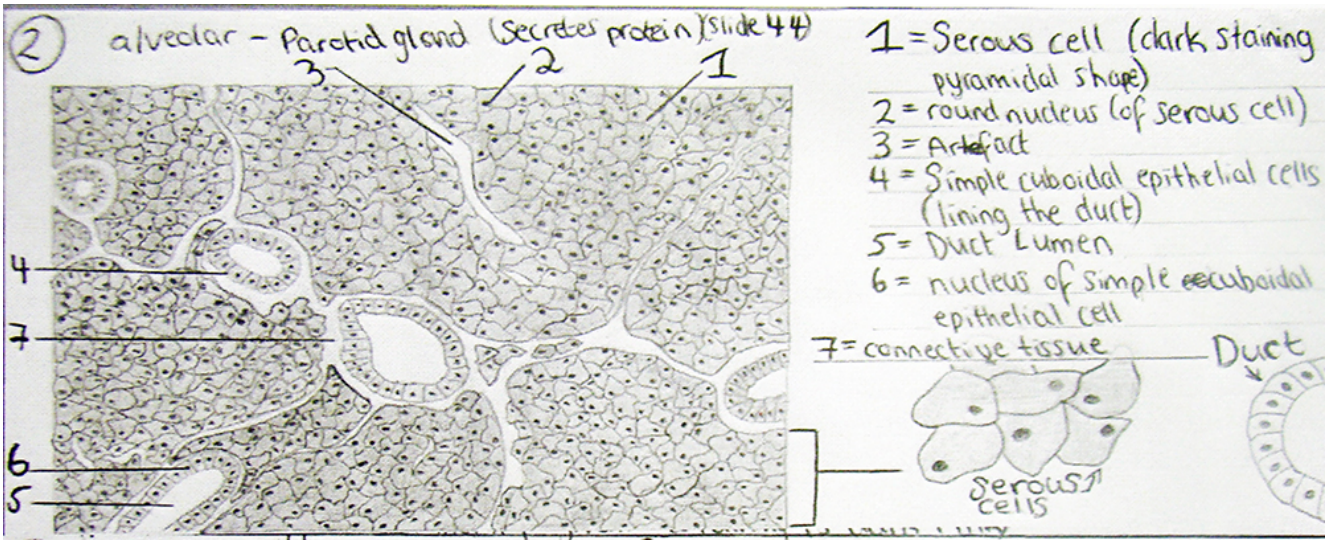
The aim was to condense information given to students during several lectures and practical classes that had been delivered over the course of one semester. The overarching objective was to encourage students to use drawing as an efficient and clear way to communicate their knowledge of form and function.

The Task

Three separate tasks were set as compulsory exercises that formed part of the continuous assessment strand for first year veterinary science undergraduates. Students were asked to submit a histology drawing, an anatomical drawing and a schematic drawing. The first two tasks involved drawing from observation, whilst the third task summarised concepts. All three tasks were limited to one side of A4 paper. The histology (micro-anatomy) task focused on depicting the cell structure of different types of gland and required observation down a microscope. In addition, this task was limited to grayscale colours to allow the students to focus on the microstructure and spatial relationships. The anatomical drawing task, also in grayscale, involved drawing directly from skeletal specimens in the laboratory. Finally, with the schematic task we asked students to convey the complexity of the equine gastrointestinal tract. For this task as well as overall shape and size, they had to convey the embryological derivation of the stomach, the histology of the small intestine and the motility of the large intestine. As this final drawing was schematic it could be portrayed as 'life-like' shapes or simply as straight lines and boxes. However, whichever method the individual student chose the length and proportions of the different parts of the tract had to be accurate. In essence all three tasks asked students to convey a lot of detailed and specialised information in a small space. Students were instructed to use minimal text, and consider use of colour or shading/hatching/stippling to differentiate different regions or tissues.



Chris Deakins © University of Liverpool



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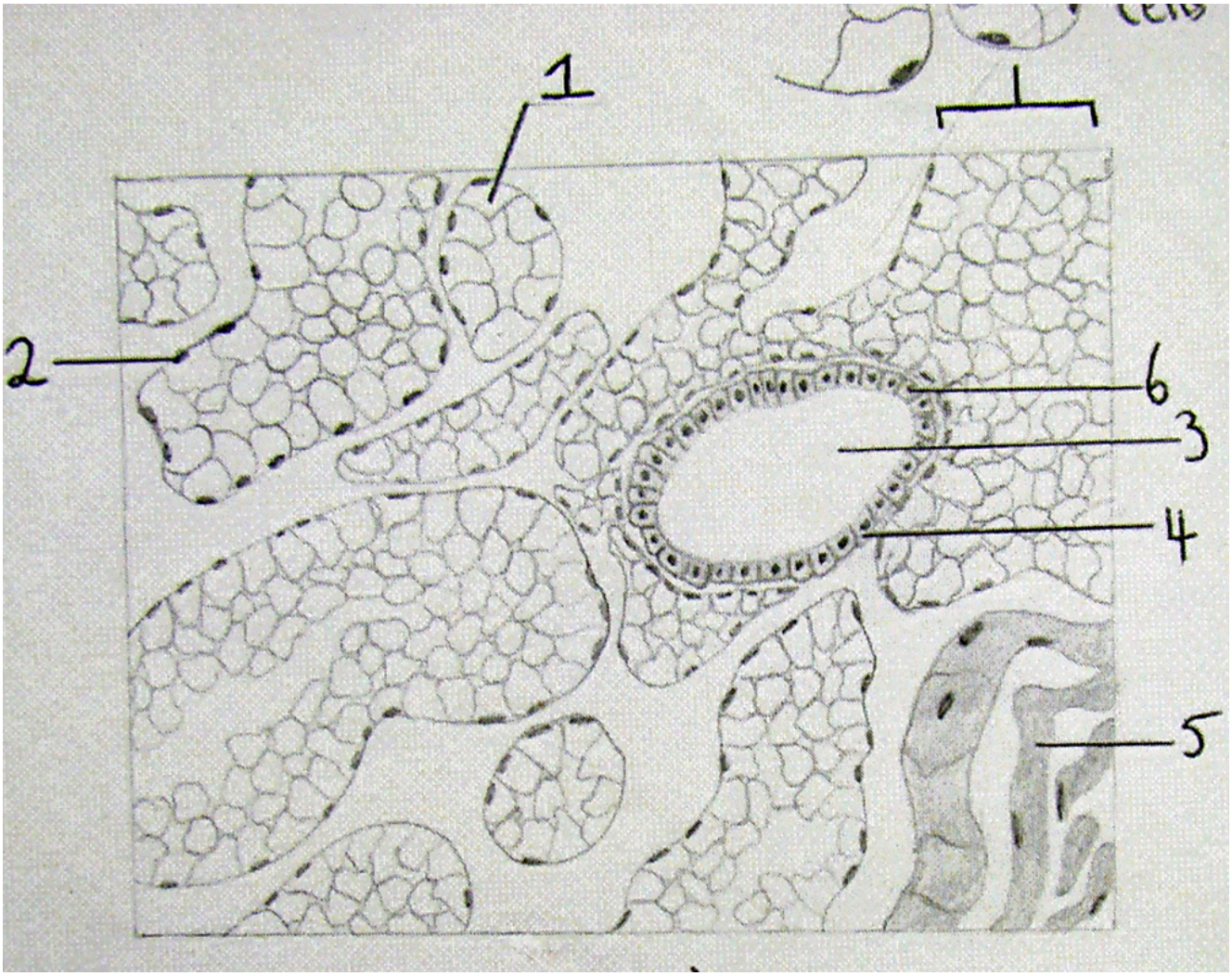
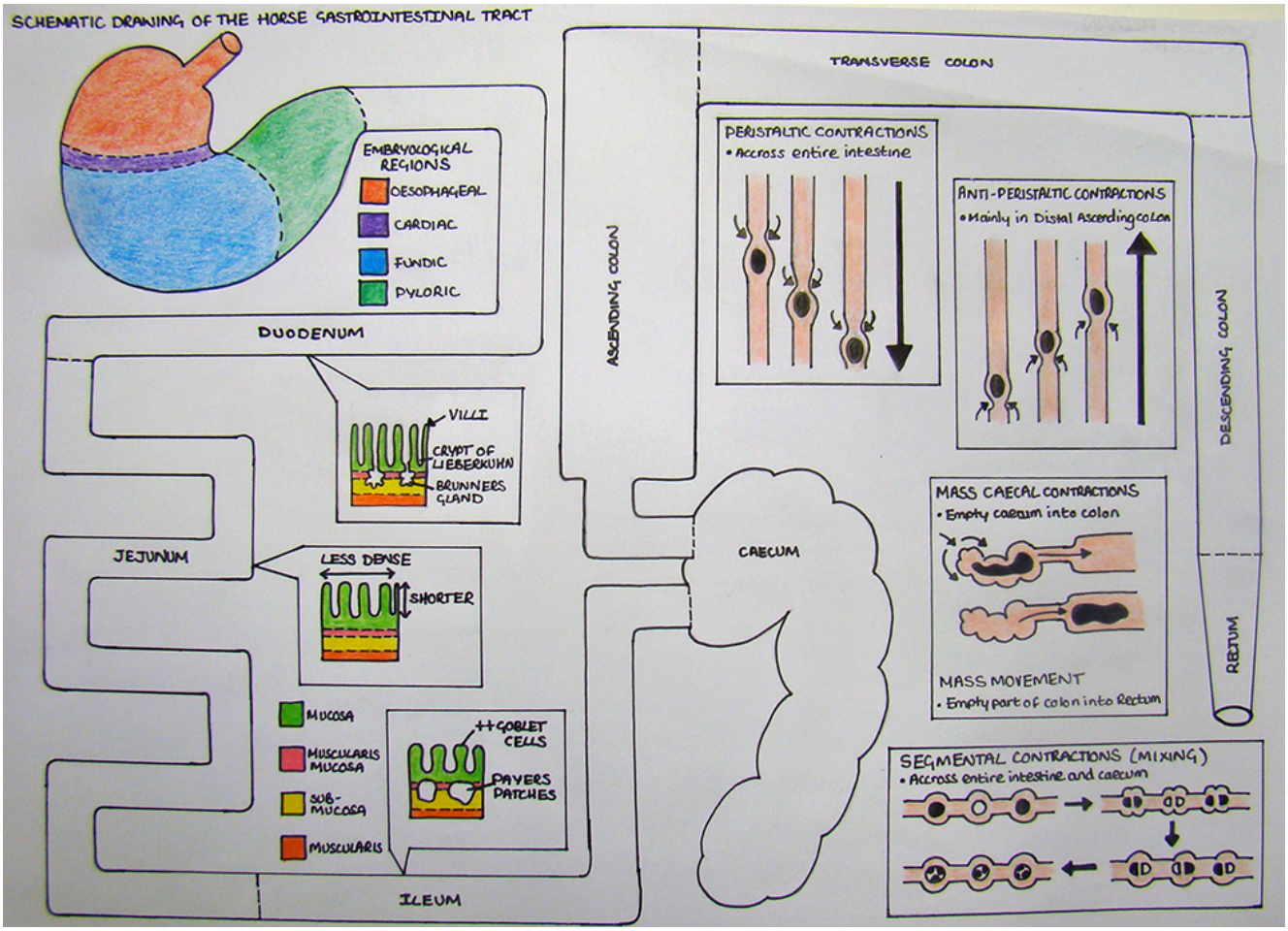
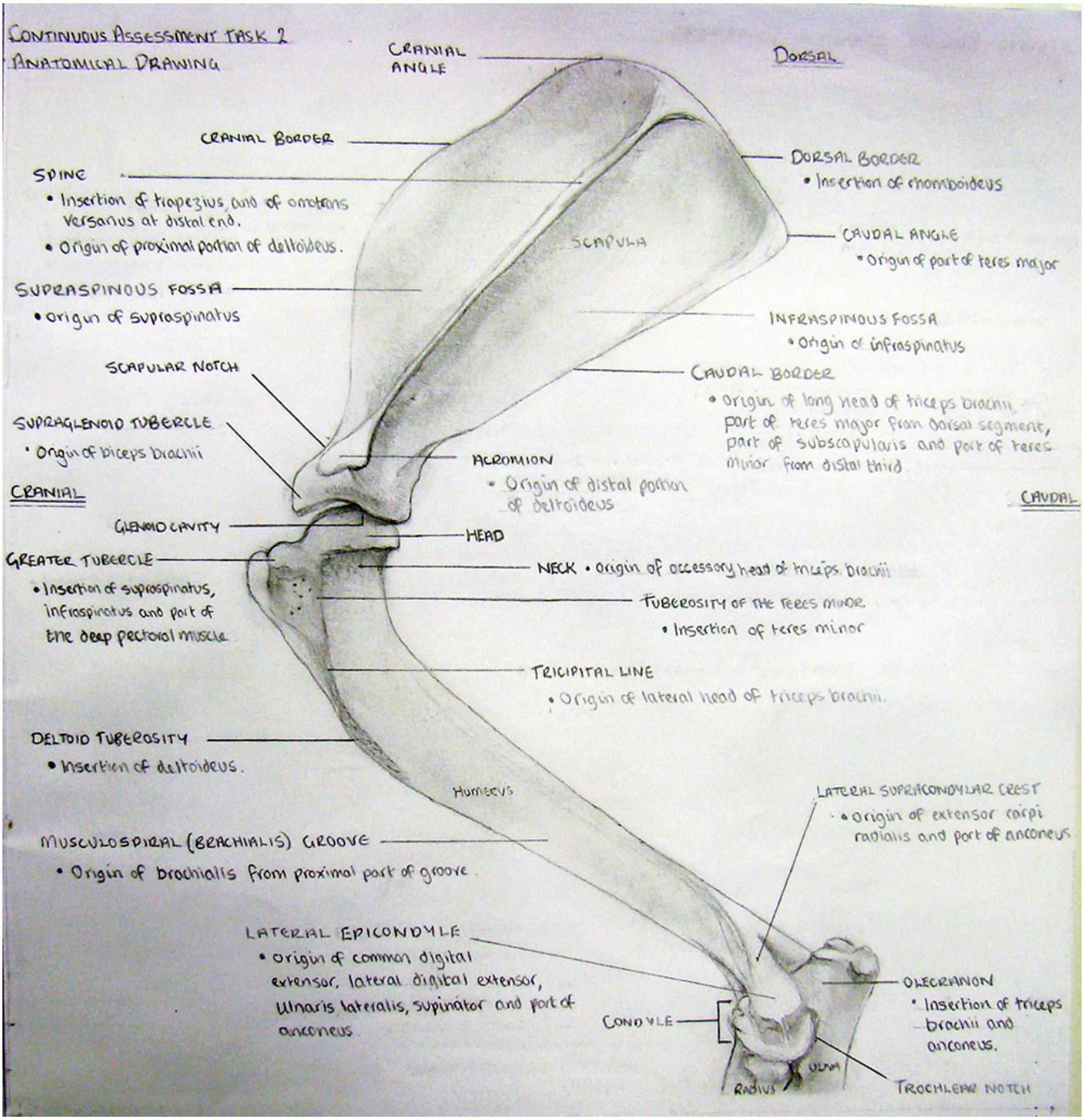


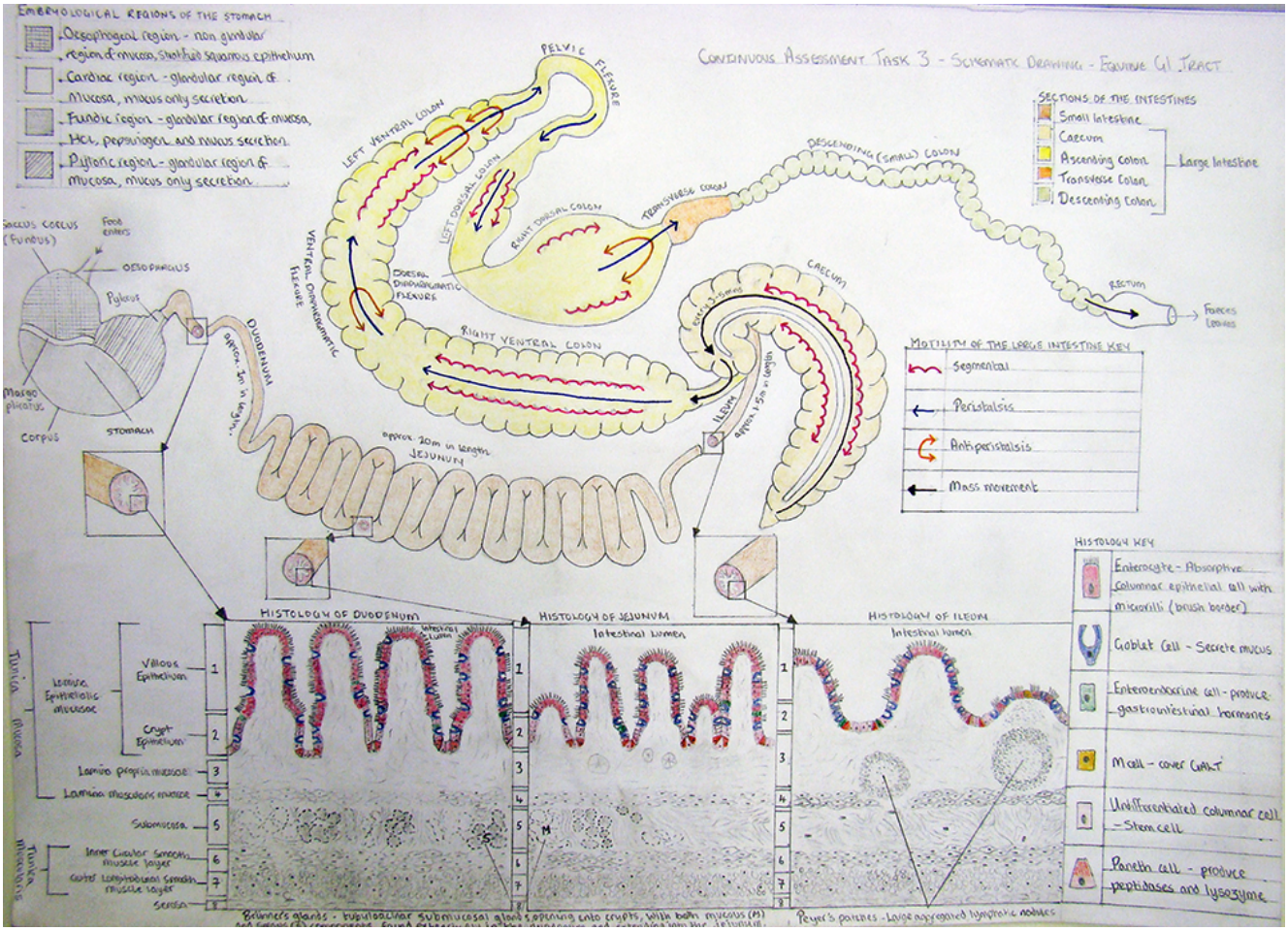


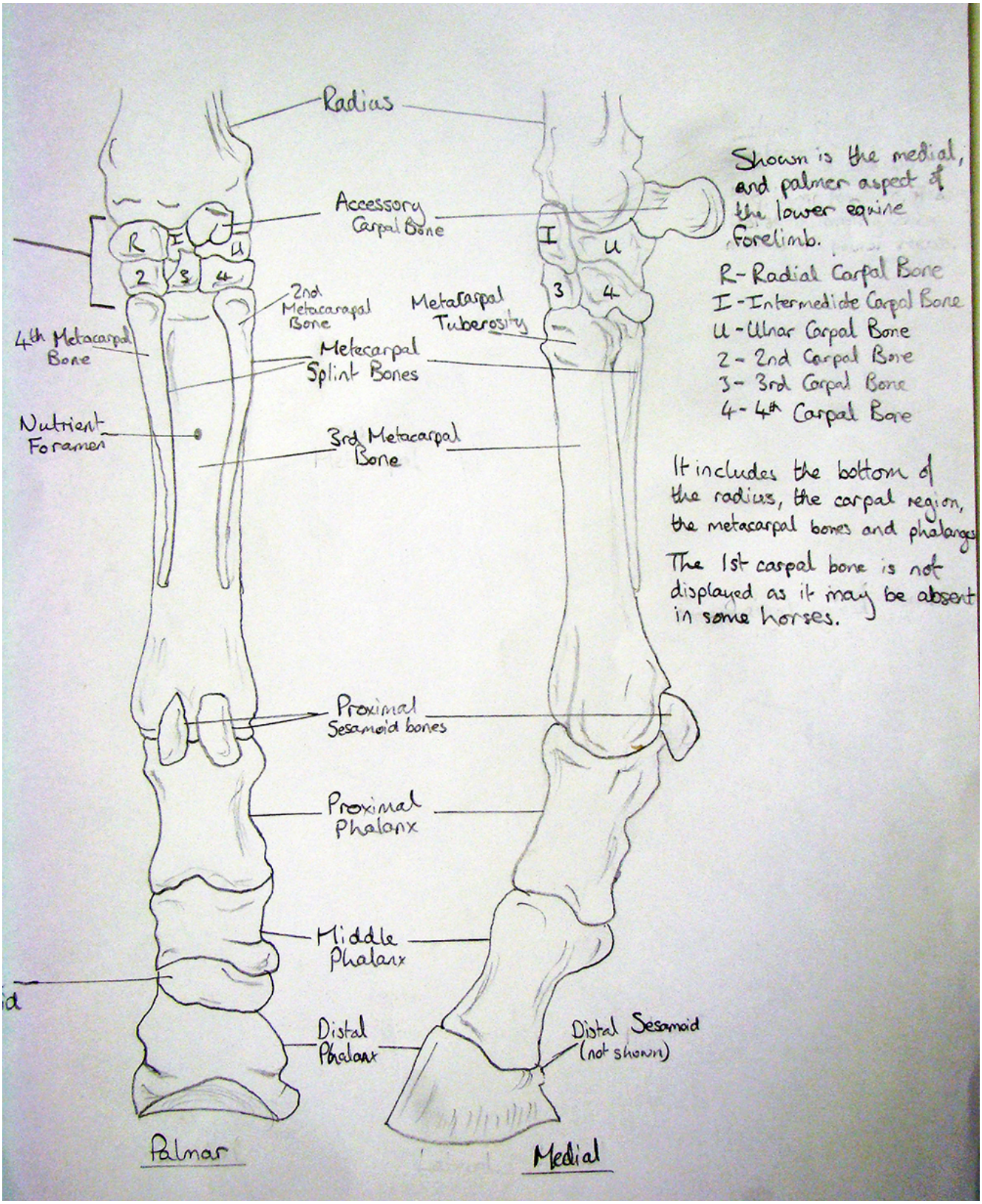
Charlotte Mccann © University of Liverpool

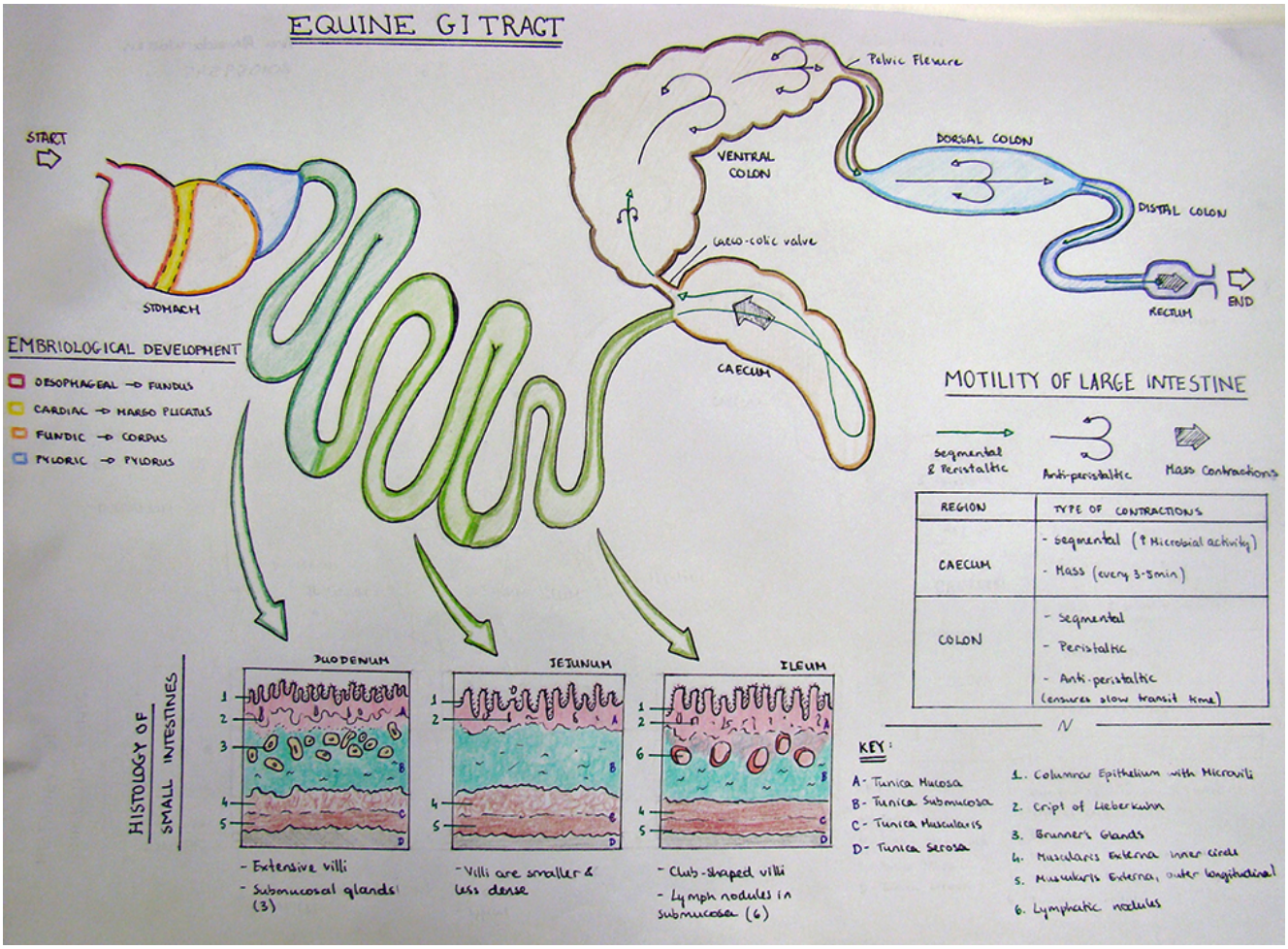
Lessons Learned

When the details of the tasks were released a large number of students expressed the opinion that they could not draw. However, the results demonstrated otherwise – all students can draw! Some students commented that they felt they had been pushed outside of their comfort zone but actually appreciated doing the exercises and would consider summarising their learning in a similar fashion in future. Although the students needed to invest a reasonable amount of time to produce accurate drawings they were learning whilst they did so and by the end, had produced valuable resources that they could use as an 'at a glance' revision guide. A few students also commented that they could see how it was a useful skill to cultivate – not only for their own understanding but also to communicate with future patients/clients.









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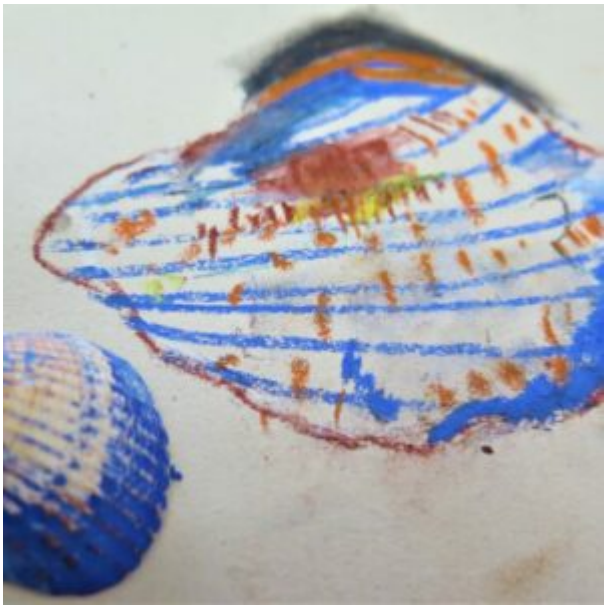
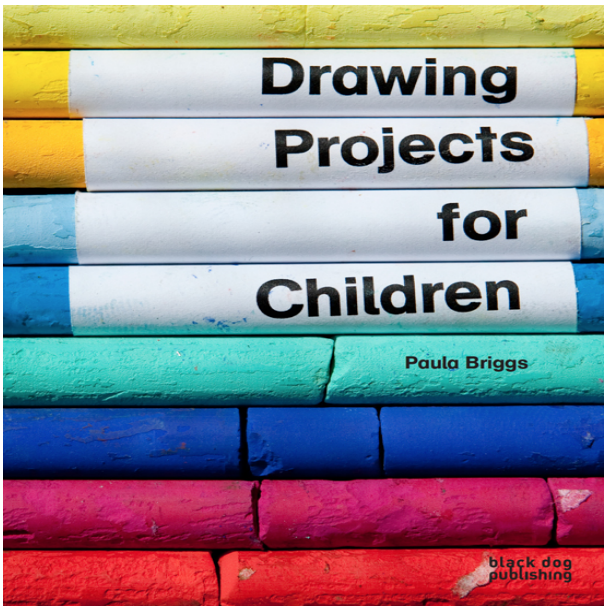
The drawing journey



See Drawing Projects for Children for more Drawing Exercises



Developing Sketchbook Work with Pink Pig Sketchbooks

Find more drawing and making ideas!

[Drawing Projects for Children and Make, Build, Create. Blackdog Publishing 2015/2016]

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Monoprinting Inspired by Goya, Turner and Cornelius in the Education Room at the

Fitzwilliam Museum, Cambridge

This post follows on from Gathering Marks and Tearing Paper to Appreciate Prints by Goya, Turner and Cornelius at the Fitzwilliam Museum, Cambridge and shares how teachers enjoyed monoprinting on a big scale. The session was facilitated by Paula Briggs and Sheila Ceccarelli from AccessArt and Kate Noble from the Fitzwilliam Museum, Cambridge.

Teachers Make Mark Making Tools and 'Battle it Out' with Ink on a Spring InSET Day

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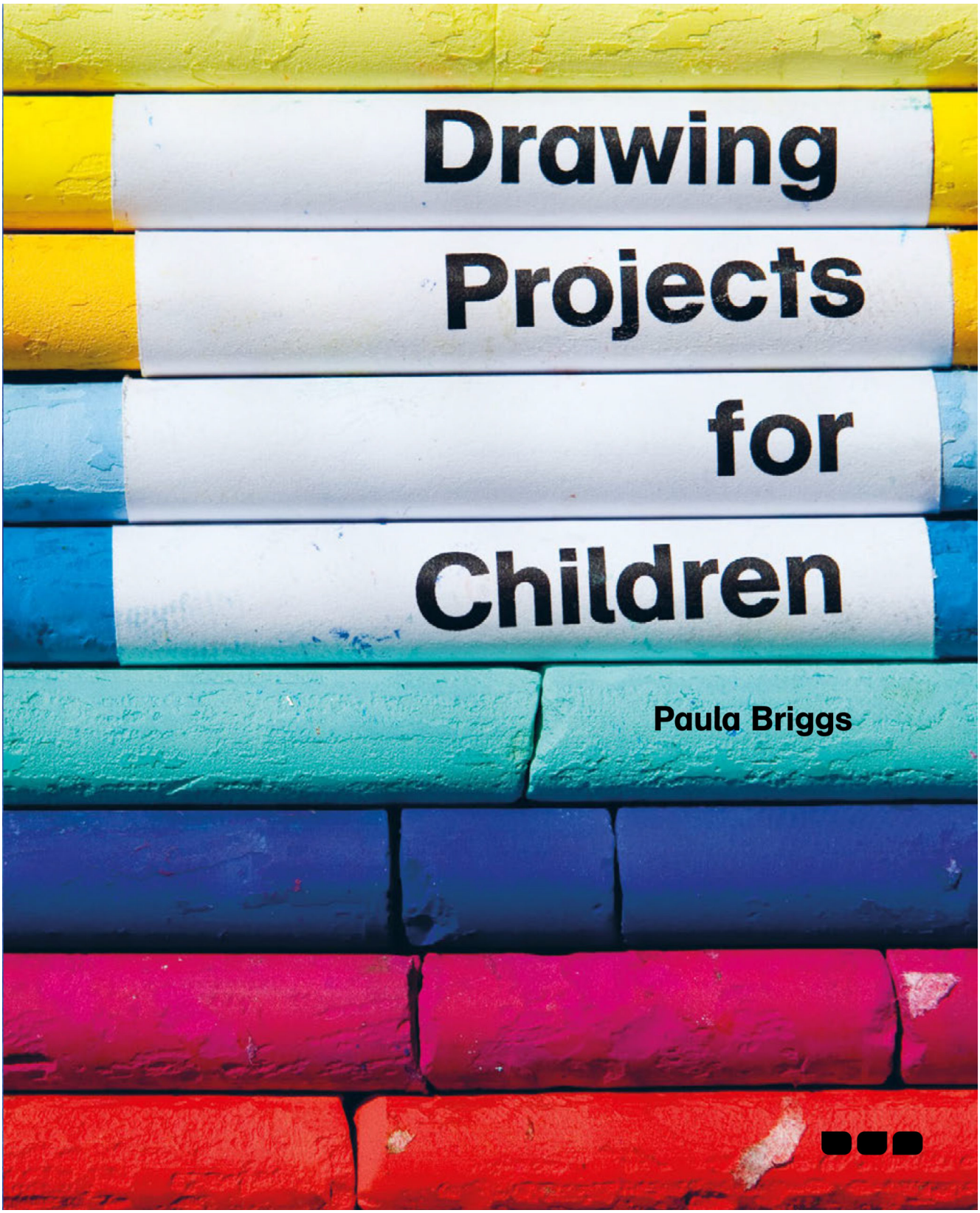
Two Beautiful Books to Inspire Teaching & Learning

Drawing Projects for Children and **Make Build Create** aim to inspire and enable children, teachers, facilitators and workshop leaders to explore drawing and sculpture in an active and adventurous way.

Find further details about each book, including reviews, below.

*The exercises and projects in these books are aimed at children aged 5 to 12, however the majority of the projects can easily be adapted for older pupils and adults too.

Drawing Projects for Children



Make, Build, Create: Sculpture Projects for Children

Published by Black Dog Press

Ros Corser

Make Build Create by Paula Briggs is an informative and helpful manual that describes a series of creative sculptural projects designed to engage all. Beautiful photographs run throughout the book, making it as visually appealing as it is inspiring. Thank you, Paula, for such an inspirational book, encouraging “hands-on art” for everyone.

Amanda Warren, NSEAD Network

Make, Build, Create is an inspiring book. Like its predecessor ‘Drawing Projects for Children’, it is beautifully produced, with beguiling photographs and a carefully laid out task which is easy to access whilst being packed with inspiration.

Based on the premise that children love to make things but probably are given insufficient opportunity, the book guides the reader through some basic premises (such as “Why make?”) and useful information about equipment and safe procedures. Some of the materials suggested may have been neglected in recent years (I confess it is a long time since I used plaster in powder form), and there are zany ideas, too. Making a plinth for a figure looks sure to appeal! And those wire insects! The photos can easily be shared with a group of children to inspire them or to illustrate processes.

My only query is who the book is aimed at. To begin with, I thought it was a book for children, but the foreword is definitely for teachers and facilitators. But does it really matter? The book is sumptuous, gorgeous, and appealing. Paula Briggs has done it again; let’s get making!

Amanda Morris-Drake, Darwin Centre for Young People

Full of excellent ideas and beautifully presented.

Doppleganger Drawing

Drawing for Science, Invention & Discovery Even If You Can’t Draw by Paul Carney

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Adaptation Drawing

Trial and Error Drawing