

# How has Digital Pathology helped revolutionize education?

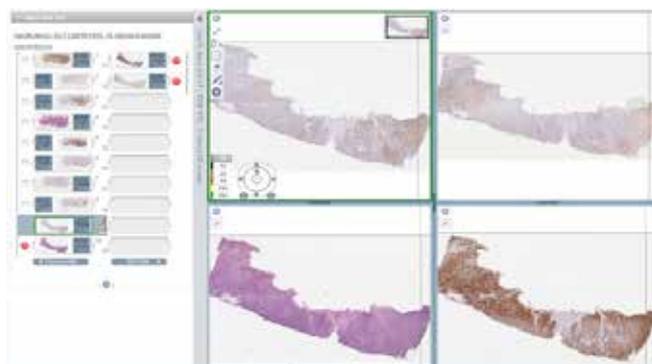
The education sector was one of the earliest adopters of digital pathology, employing it throughout the full spectrum of histopathology learning from undergraduate and post graduate education through to continuous professional development (CPD) and external quality assurance (EQA).

Traditional education using light microscopes and glass slides has many challenges, including access to slides and variable course content, which can be overcome with the use of digital pathology. These include:

- **Standardization of course material:** With digital pathology, each participant sees the exact same content, as opposed to similar slides cut from the same tissue block, which may or may not exhibit the same morphological and biomarker expression patterns. Standardization of the content ensures that each participant has the same learning opportunities and quality of education. In addition, digital pathology facilitates the inclusion of rare cases in course material as only one digital copy of the slide is required, compared to multiple glass slides for a standard class size.
- **Improved Accessibility:** Digital pathology facilitates greater access to tissue and slide-based material outside of the laboratory and traditional tutorial times. Users can access their digital course content via the

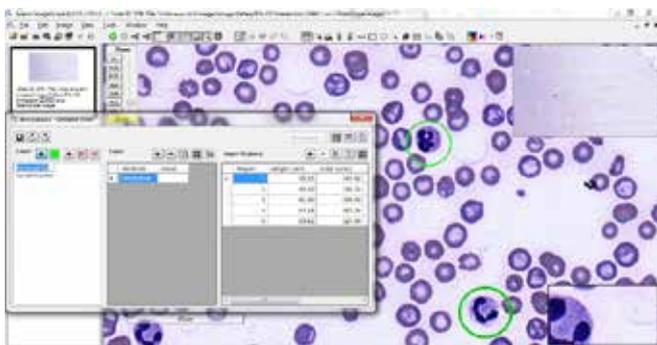
internet on a standard web-browser, via personal computer, tablet, or smartphone devices, giving them the ability to view slides anytime, anywhere. The use of digital pathology to support CPD and EQA schemes helps to reduce circulation turnaround time and costs, as the slides no longer have to be physically shipped from one site to the other, but rather can be efficiently shared with multiple locations simultaneously.

- **Improved Learning:** Moving from a physical to a digital environment for histopathology education offers many benefits over traditional light microscopy and glass slide teaching methods. Users can view multiple digital slides simultaneously, aligning them side-by-side for improved comparison between different tissue sections and immunohistochemistry (IHC) markers (Figure 1).



**Figure 1:** Digital pathology enables multiple digital slides to be viewed simultaneously, aligning them side-by-side for improved comparison between different tissue sections and IHC markers.

Educators can annotate significant regions of interest, right down to the cellular and sub-cellular level, which cannot be done readily with glass slides (Figure 2). And with specialized digital pathology educational software applications, questions and tutorials can be embedded into the digital slides, providing contextual information and direct links to tissue or cellular features referenced in the questions.



**Figure 2:** Digital slides are often used by educators for histology training. Utilizing digital slides and software applications, it is possible to annotate significant regions of interest.



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