



AtTheViewBox: No-code Solution in Creating Collaborative Interactive Cased-Based Presentations

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Background/Problem Being Solved

Radiology lectures are largely taught through PowerPoint presentations with 2D screenshot images. This experience does not mimic the workflow of reading radiological studies at the workstation. AtTheViewBox is a tool that can be used to embed DICOM files in presentations with the tools of scrolling, windowing, panning, zooming, and "multiplayer interaction" where learners can view cases and project their view onto the presenter screen. Our previous work demonstrated strong learner demand for this format and that such presentations can be built with existing open-source software libraries. However, we noted that coding as a requirement was a significant barrier to entry for adoption of these tools.

Intervention(s)

A UI no-code solution was created around our web-based application, AtTheViewBox. The AtTheViewBox application allows users to load various DICOM cases. Educators can embed these cases into their presentations and create collaborative session rooms. Learners can scan a QR-code to join the session rooms and broadcast their screen to others in the room. We also created a Chrome extension that allows educators to easily import cases into AtTheViewBox. View https://mfei1225.github.io/AtTheViewBox_Demo_Site/ for demonstration.

Barriers/Challenges

Users still have to find and import cases into AtTheViewBox. Often finding cases online and/or exporting cases from PACs presents one of the largest barriers. In the future, we plan on including a list of publicly available cases that users can query.

Outcome

Residents and educators from the University of Pennsylvania, Creighton University, Emory University, and Mallinckrodt Radiology Departments, were surveyed after showing them a demo presentation with small bowel obstruction cases. The educators showed strong interest in this format with an average rating of 9.5/10 agreeing that it would be a strong asset to medical education, however, they reported an average probability of 58% for being able to create such a presentation themselves. The same educators were surveyed after showing them a video of the no-code interface used to build the demo and the probability improved significantly to an average of 83%. Additionally, a majority noted that it was similar to or easier than their experiences making case presentations using PowerPoint.

Conclusion/Statement of Impact/Lessons Learned

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Creating a no-code UI around AtTheViewBox narrows the gap of demand in cased-based learning and the ability for educators to create such presentations. Ultimately this can enrich the educational experience by replicating reading at the workstation and oral boards. Based on these results, workshops to teach attendings how to use this tool have been scheduled at University of Pennsylvania and Creighton University.

Figure(s)

How difficult do you think it would be to make a website similar to the demo? 29 responses



After watching this video, how difficult do you think it would be for you personally to create a presentation similar to the demo? 29 responses



If making such educational materials was comparable in difficulty to making a powerpoint presentation, would you consider using this format?



How would you compare this process to your current approach to embedding cases in Powerpoint presentations? 29 resp



Figure 1. Survey results of demo presentation before and after showing the no-code interface.





Keywords

Applications; Educational Systems; Emerging Technologies