

The logo for the University of Florida, consisting of the letters 'UF' in a bold, blue, serif font.

A Comprehensive
Case-Based Intro to Radiology
for Improved
Imaging Skills and Appropriate Utilization

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Disclosures

- University of Florida Innovate Licensed Technology – WIDI Medical Student Modules (T18942)

Background

- Imaging over-utilization can harm patients and add to the burden on the already overstressed radiology workforce.
- Students in the health professions receive too little radiology education.
- Therefore, it is essential to train current and aspiring health professionals in:
 - imaging interpretation
 - appropriate utilization



Project Overview

- Case-based section on WIDI e-learning platform; ~140 modules encompassing all major organ systems and several imaging modalities
- Its purpose is to teach:
 - how imaging is used in the workflow of medical decision-making.
 - basic imaging interpretation skills.
 - imaging findings that are tested on licensing exams (USMLE, COMLEX).
- Target audience
 - Medical students
 - PA students
 - First-year radiology residents
 - Non-radiologist clinicians

UF WIDI CBIR e-learning modules

Case Components

- Patient history
- Physical exam
- Relevant labs
- ACR appropriateness criteria
- Key images & full Visage DICOM sets
- Video explanations
- Radiology reports
- Learning points & socioeconomic factors

Learning Process

- Make provisional diagnosis
- Select appropriate imaging
- Assess imaging findings
- Determine acuity & need for further imaging
- Make final diagnosis
- Devise assessment & plan

- An educator guide is available to help with case selection

Try it!

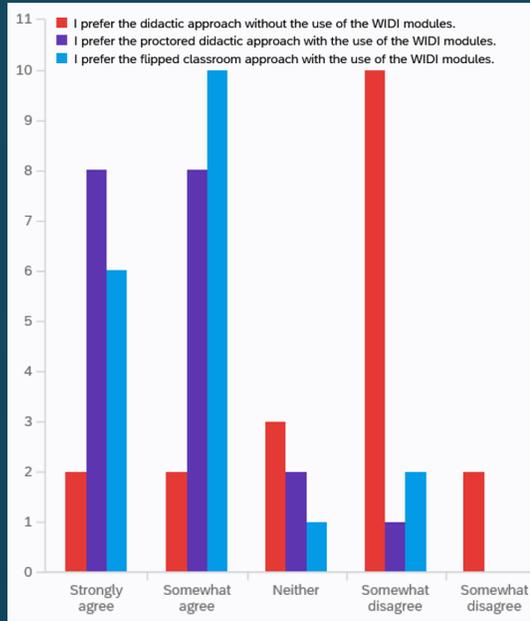
<https://widionline.xray.ufl.edu/learn/case-based-intro-to-radiology>

The screenshot shows the WIDI (Web-based Interactive Diagnostic Imaging) interface. The top navigation bar includes 'Login' and 'Registration'. The left sidebar contains a menu with categories: 'Consultation' (Decision Support, AMAPRA Category 1 CME™ eligible), 'Education' (Radiology Training Curriculum, Case-Based Intro to Radiology, Search Pattern Assist, Accredited Case Practice, AMAPRA Category 1 CME™ eligible, Learning Packages), and 'SIMulations'. The main content area is titled 'N15) New onset seizure in a patient with headaches'. It features a 'Back to Neuroradiology' link and a table of contents with five items: I Learning Outcomes, II History, III Physical Exam, IV Labs, and V Provisional Diagnosis. A grey box instructs the user to 'Review the Learning Outcomes, Hx, PE and Labs, and begin the module with your Provisional Diagnosis. Keep hitting "Next" to move through the module.' The 'Learning Outcomes' section lists three tasks: 1. Articulate your relationship with the consulting diagnostic radiologists in the evaluation of a patient with seizures. 2. Review the DDX considerations in a patient with seizures. 3. Identify the spectrum of imaging findings in appropriate modalities for evaluating patients with seizures. The 'History' section describes a 33-year-old female with a 3-month history of constant throbbing headaches associated with nausea, unresponsive to preventative and abortive migraine therapy. The 'Physical Exam' section provides vital signs and neurological findings: BP: 140/88, HR 80/min, RR 14/min, Temp 98F, O2 saturation 98%. Neuro: 3+ right radial deep tendon reflexes, 2+ reflexes otherwise, 4+/5 strength in RUE, 5/5 strength in LUE, LLE, and RLE. CNs II-XII are intact. The 'Labs' section is empty. The 'Provisional Diagnosis' section asks the user to select the most appropriate Dx from a list: Stroke, Brain Tumor, Migraine, and Brain abscess. The bottom footer includes 'Home About Contact' and 'Developed by Versive Inc'. Logos for the University of Florida College of Medicine and Department of Radiology are also present.

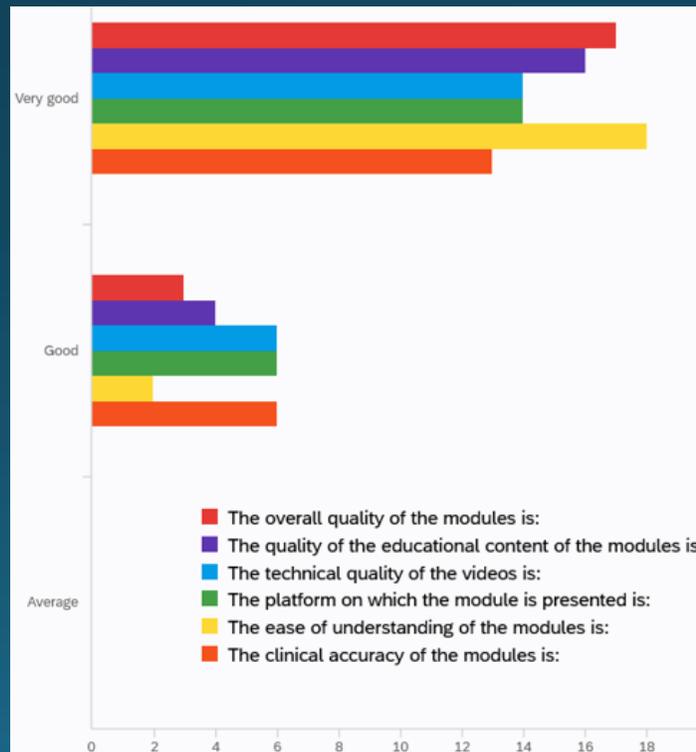
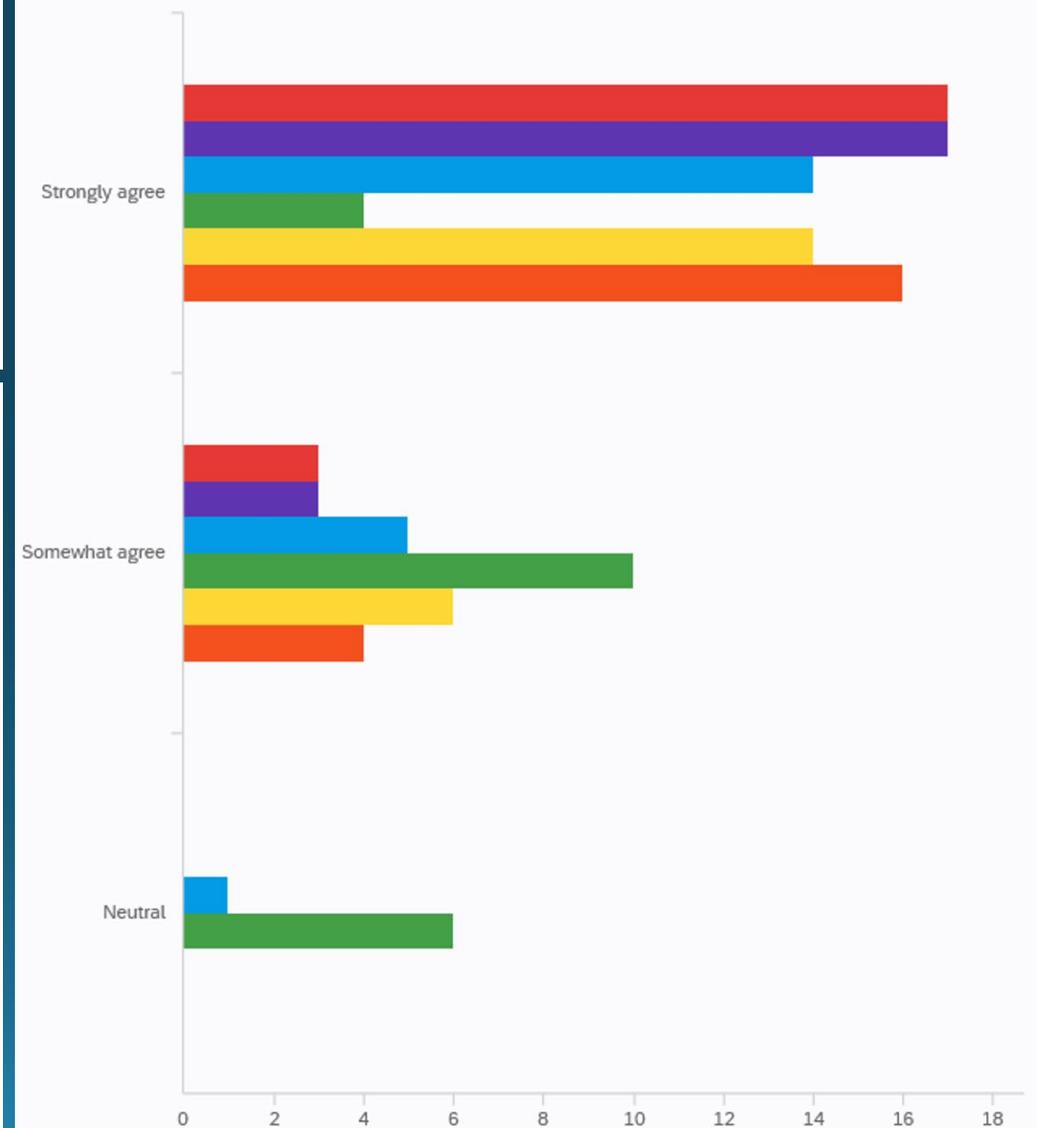


Focus group results

- Surveyed: 20 MD, PA, PhD, undergraduate students.
- Positive feedback:
 - Enhanced imaging interpretation skills.
 - Complemented existing curricula.
 - Fostered critical thinking.
 - Detailed clinical and imaging content.
- Rated:
 - High module quality and content.
 - Videos and understanding as very good.
 - Modules' length and information as appropriate.
- Preference: Flipped classroom/proctored didactic over traditional methods.



- Red: I believe these modules will improve my imaging interpretation in clinical settings.
- Purple: These modules complement the medical school or PA curriculum.
- Blue: The modules stimulate critical thinking.
- Green: The socioeconomic factors presented in the cases will affect the way I care for my patients.
- Yellow: The modules encompass the clinical details I am responsible for learning at my level of training.
- Orange: The modules encompass the imaging details I am responsible for learning at my level of training.



Next steps

- Implement external peer review.
- Collaborate with UF PA school for outcomes studies.
 - Note: They have integrated our modules into their curriculum.

References

- Pierre K, Slater R, Raviprasad A, Griffin I, Talati J, Mathelier M, Siström C, Mancuso A, Sabat S. **Enhancing Radiology Education With a Case-Based Intro to Radiology on the UF WIDI e-Learning Platform.** *Curr Probl Diagn Radiol.* 2023 Aug 26;53(8):S0363-0188(23)00125-1. doi: 10.1067/j.cpradiol.2023.08.011. Epub ahead of print. PMID: 37690966.
- Chew C, O'Dwyer PJ, Sandilands E. **Radiology for medical students: Do we teach enough?** A national study. *Br J Radiol.* 2021 Mar 1;94(1119):20201308. doi: 10.1259/bjr.20201308. Epub 2021 Feb 9. PMID: 33560874; PMCID: PMC8011254.
- Rohren SA, Kamel S, Khan ZA, Patel P, Ghannam S, Gopal A, Hsieh PH, Elsayes KM. **A call to action; national survey of teaching radiology curriculum to medical students.** *J Clin Imaging Sci.* 2022 Oct 10;12:57. doi: 10.25259/JCIS_36_2022. PMID: 36325497; PMCID: PMC9610045.

Thank you

