

# The Art of Understanding: Integrating Visual Literacy into Medical Education

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## Introduction

**Visual literacy** – the ability to interpret, analyze, and apply visual information, is a cornerstone of clinical practice, from interpreting diagnostic imaging to nuanced physical examination. Despite its importance, medical faculty often lack formal training in visual literacy frameworks like Visual Thinking Strategies (VTS) or tools to address systemic biases in medical visuals such as underrepresentation of diverse anatomies and pathologies).



### Key Gaps:

- While 83% of U.S. medical schools offer visual arts engagement, only 22% mandate it.
- Faculty rely heavily on visual aids (medical imaging, AR/VR) but lack structured training to evaluate or adapt them for bias.
- Despite visual-rich instruction, standardized visual literacy competencies remain absent in most programs.

## Methods

**Study Design:** Exploratory qualitative study assessing visual literacy practices among medical educators.

- **Participants:** 30 faculty members at a mid-sized U.S. medical school (Midwestern region), purposely sampled across clinical disciplines.
- **Data Collection:**
  1. Semi-structured interviews focused on visual resource use, self-reported competency, and barriers to implementation.
  2. Structured surveys measuring familiarity with VTS, “deep looking” practices, and AR/VR tool adoption.
  3. Circular audit: evaluated representation biases in institutional teaching materials (e.g. anatomical visuals, case studies).

### Analysis

- Thematic coding to identify recurrent gaps in faculty visual literacy knowledge and institutional support deficits.



## Key Findings

### Faculty Practices & Knowledge Gaps

#### Visual Aid Use:

Use medical imaging/diagrams

89%

Use AR/VR

67%

Received training to evaluate visual content critically

only 34%

Lack the required training

78%

#### Technology Adoption Barriers:

- AR/VR tools (e.g., Anatomage Table) improve engagement

#### Awareness of Frameworks:

- 12% familiar with VTS; 8% use Diagnostic Interpretive Guide (DIG)

#### Inclusivity Challenges:

- 91% noted reliance on visuals **centered on white male anatomy**

## Discussion

### Bridging the Gap: Faculty & Institutional Roles

- **Professional Development:** Workshops on VTS and DIG to enhance observational rigor.
- **Curriculum Reform:** Mandate visual literacy modules addressing inclusivity and bias.
- **AR/VR Integration:** Partner with tech developers to create training simulations for diverse patient populations.

## Discussion

### Social Justice & Clinical Impact:

- Prioritize inclusive visuals to improve diagnostic accuracy for underrepresented groups and address disparities in medical education and patient outcomes.



## Recommendations

- **Faculty Training:** Implement annual VTS & AR/VR workshops to train faculty in critical visual analysis and bias reduction through structured “deep looking” exercises and emerging technologies.
- **Curriculum Standards:** Mandate visual literacy competencies in AAMC guidelines, emphasizing inclusive representation and bias mitigation.
- **AR/VR Integration:** Co-create culturally responsive simulations with tech-developers that reflect diverse patient populations.
- **Research Priorities:** Longitudinal studies to measure the clinical impact of visual literacy training on diagnostic equity.

## Conclusion

Visual literacy is not ancillary – it is foundational to equitable medical education. By equipping faculty with evidence-based frameworks and innovative technologies, institutions can train clinicians to navigate both anatomical complexity and human diversity with equal proficiency.

## References

